



**Lexmark™ C920**

**5056-xxx**

## ***Lexmark Repair Catalog***

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## Repair information

### ***Handling ESD-sensitive parts***

Many electronic products use parts that are known to be sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive parts, use the following instructions in addition to all the usual precautions, such as turning off power before removing logic boards:

- Keep the ESD-sensitive part in its original shipping container (a special “ESD bag”) until you are ready to install the part into the machine.
- Make the least-possible movements with your body to prevent an increase of static electricity from clothing fibers, carpets, and furniture.
- Put the ESD wrist strap on your wrist. Connect the wrist band to the system ground point. This discharges any static electricity in your body to the machine.
- Hold the ESD-sensitive part by its edge connector shroud (cover); do not touch its pins. If you are removing a pluggable module, use the correct tool.
- Do not place the ESD-sensitive part on the machine cover or on a metal table; if you need to put down the ESD-sensitive part for any reason, first put it into its special bag.
- Machine covers and metal tables are electrical grounds. They increase the risk of damage because they make a discharge path from your body through the ESD-sensitive part. (Large metal objects can be discharge paths without being grounded.)
- Prevent ESD-sensitive parts from being accidentally touched by other personnel. Install machine covers when you are not working on the machine, and do not put unprotected ESD-sensitive parts on a table.
- If possible, keep all ESD-sensitive parts in a grounded metal cabinet (case).
- Be extra careful in working with ESD-sensitive parts when cold-weather heating is used because low humidity increases static electricity.

### ***Service precautions***

Observe the following precautions whenever you service the printer:

- Be sure to unplug the printer from the outlet before attempting to service the printer.
- To reassemble the printer, reverse the order of disassembly unless otherwise specified.
- Do not operate the printer anytime during disassembly. If it is absolutely necessary to run the printer with its covers removed, do not allow your clothing to be caught in revolving parts such as the gears, rollers, and fan motor.
- Never touch the terminals of electrical parts or high-voltage parts such as the HVPS (high voltage power supply) board.
- Be sure to handle the fuser carefully, as it remains hot for a while after the printer stops running. Always unplug connectors by holding the connector housing.
- Be sure to use the fuse listed in the parts catalog.
- Do not forget to install the ground wire or ground plate to ensure positive conduction. Install the screw with a toothed washer in the correct position at reassembly.

## ***RIP board/operator panel replacement***

**Warning:** If the operator panel and the RIP board are being replaced at the same time, replace the parts in this order to avoid damage to the machine.

1. Replace the RIP card first.

**Note:** Do not replace the new operator panel and RIP card in the machine at the same time.

2. After installing the new RIP card, and before installing the new operator panel, start the printer.
3. After the printer has completed startup, turn off the printer and replace the operator panel.  
**Note:** If the operator panel display has failed, the printers' startup cycle is complete when the driver motor and fans shut down, and the machine is quiet.
4. After installing the new operator panel, start the printer, and allow the printer to go through a complete startup cycle and the display to go to Ready.
5. If the problems persist, leave the new operator panel in the machine, place the old RIP card back in the machine, and start it up. After the machine startup, shut down the machine, and install the new RIP card. After installing the new RIP card, restart the machine, and let it go through the startup cycle.

After this procedure is completed successfully, there is no need to adjust any settings.

If the above procedure fails, you must contact the technical support center for further instructions.

## ***Handling printed circuit boards***

The following precautions must be observed when handling circuit boards with metal oxide semiconductor integrated circuits.



**CAUTION:** If you are removing the motor driver board or the low voltage power supply boards, ensure they are properly discharged before handling.

### **Transportation/storage**

- During transportation or when in storage, new circuit boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place circuit boards in a location exposed to direct sunlight.
- When it becomes absolutely necessary to remove a board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch pins of the integrated circuits with your bare hands.

### **Replacement:**

- Before you unplug connectors from the circuit boards, be sure the power cord has been unplugged from the power outlet.
- When you remove a board from its conductive bag or case, do not touch the pins of the integrated circuits or the printed pattern. Place it in position by holding only the edges of the board.
- Before you plug connectors into the board, be sure the power cord has been unplugged from the power outlet.

### **Inspection:**

- Avoid checking the integrated circuits directly with a multimeter; use connectors on the board.
- Never create a closed circuit across integrated circuit pins with a metal tool.
- When it is absolutely necessary to touch the integrated circuits and other electrical components on the board, be sure to ground your body.

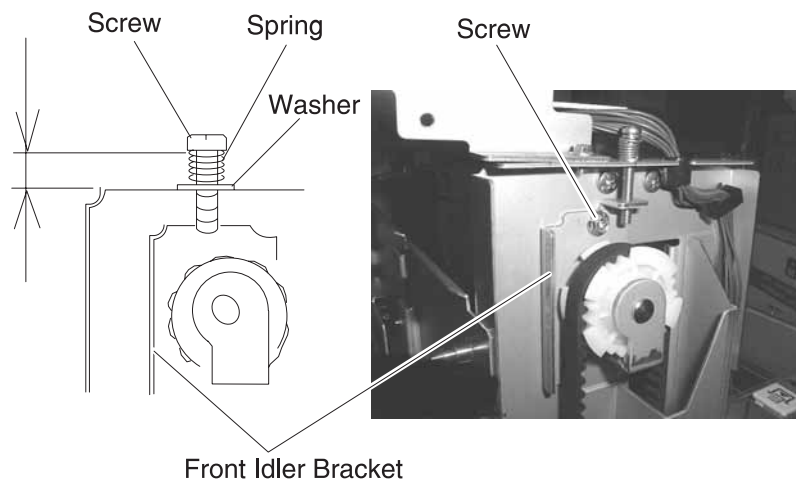
***Check finisher alignment when moving or servicing the finisher***

After moving or servicing the finisher, print some test pages to the finisher to ensure the vertical and horizontal alignment is correct. If the finisher is not properly aligned, refer to **“Aligning the finisher and printer” on page 3-59** for alignment instructions.

## Adjustments

### *High-capacity paper feed timing belt adjustment*

1. Secure the bracket with the screw, as shown.
2. Attach the spring and washer to the bracket with the screw.
3. Adjust the screw to  $6\text{mm} \pm 1\text{mm}$ .
4. Tighten the screw completely.
5. Adjust the timing belt on the rear in the same manner.



### *Adjustments and procedures following parts replacement*

**Note:** When troubleshooting, or prior to making any adjustment to print quality, always be sure:

- The printer is installed on a level, rigid surface.
- The photodevelopers are never exchanged. Do not exchange a black photodeveloper for a color photodeveloper, as they have different surface phase counts.
- The Alignment Page is used when adjusting print registration.

Whenever you replace any of the following parts, be sure to perform the required adjustments or procedures. The adjustments are in the Repair information and Diagnostic aids chapters.

#### **Printer controller board/printer control EPROM (U7)**

If you replace the printer controller board, remove EPROM (U7), and install it on the new board. Also check the printhead alignment.

#### **Printhead controller board**

If you replace the printhead controller board, replace all the eeproms from the old printhead controller board.

#### **RIP controller board**

If you replace the RIP controller board, move the memory, and option cards from the old card to the new one.

**Transfer belt**

If you replace the transfer belt, check the printer alignment (*X*, *Y*, and *Theta*), adjusted in diagnostic mode.

**LED printhead controller board or LED printhead**

If you replace the LED printhead controller board or LED printhead, check and adjust the following items in diagnostic mode:

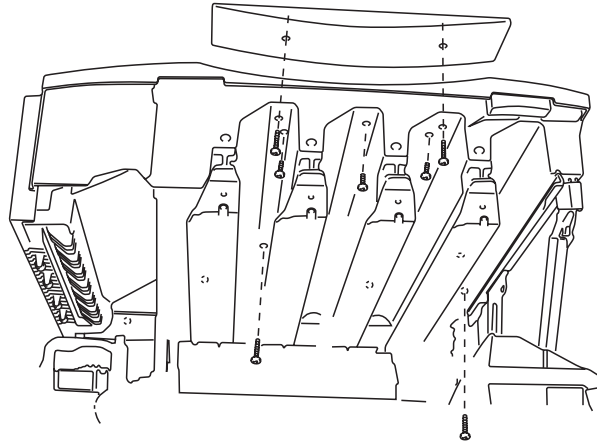
Printer Alignment (*X*, *Y*, and *Theta*)

Print the alignment pages. Make sure that you installed the EEPROMS supplied with the printhead on the printhead controller board.

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## Removals

### *Cover, top removal*



1. Open the top unit, and remove the photodevelopers and toner cartridges. Cover the photodevelopers to avoid damage from exposure to the light.
2. Remove the two silver screws, and remove the spacer.
3. Remove five black screws from the bottom and the four silver screws from the back side.
4. Remove the top cover.

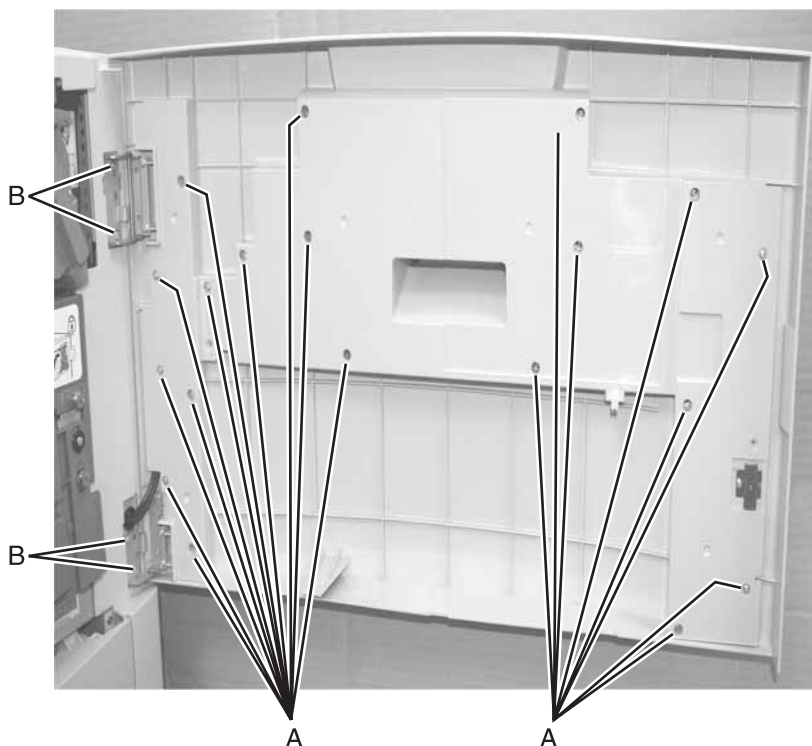
**Note:** When replacing the top cover, avoid pinching or cutting wires that connect the printhead controller board to the face down unit.

## Front door / operator panel removal

**Warning:** If the operator panel and the RIP board are being replaced at the same time, replace the parts in the order described in steps a through d below to avoid damage to the machine.

- a. Replace the RIP card (this must be the first part replaced).
  - b. Restart the printer. Let the machine finish the startup cycle, which takes several minutes. The machine is silent when startup is complete.
  - c. Install the new operator panel.
  - d. Restart the printer and let the startup cycle complete.
- If the above procedure fails, contact the technical support center for further instructions.

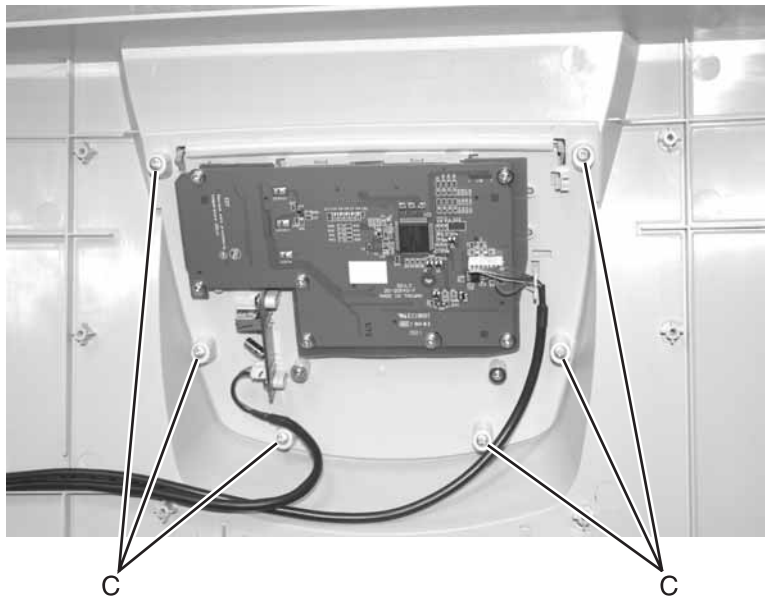
1. Open the front door of the printer.
2. Remove the screws (A) from the stiffener bracket.



3. Remove the stiffener bracket.
  4. Clip the wire tie that holds the USB and operator panel cables to the door.  
**Note:** Refasten and properly route the cables using a wire tie to avoid pinching them with the stiffener.
  5. Unplug the two cables from the operator panel.
- Note:** To continue removing only the operator panel, skip steps 6 and 7
6. Unscrew the four screws (B) that hold the front door mounting brackets to the printer.
  7. Remove the front door from the printer.



8. Remove six screws (C) that hold the operator panel to the front door.

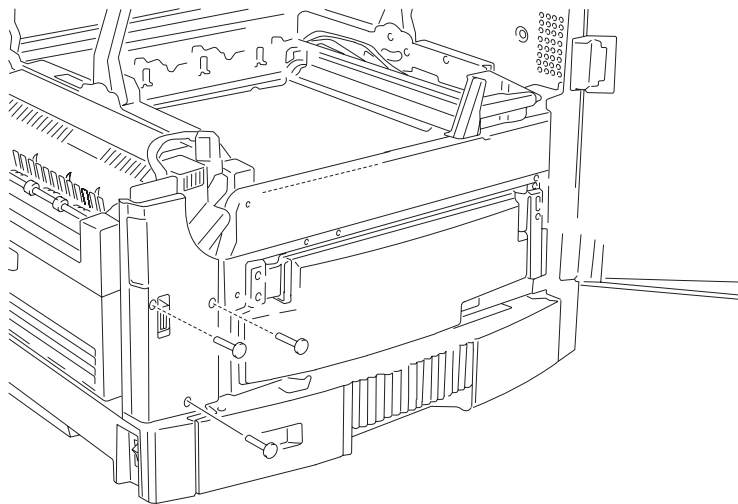


9. Remove the operator panel from the door.

**Note:** If the USB cable or the operator panel cable is being replaced, use the toroids from the old cables with the new cables.

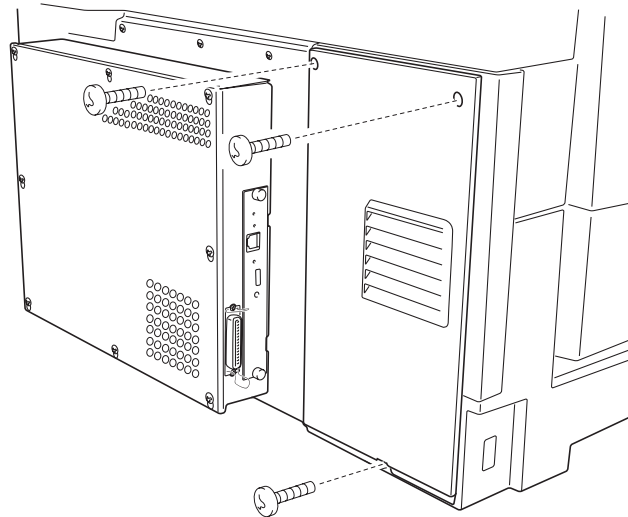
### ***Cover, front left removal***

1. Open the front cover and remove the cassette.
2. Remove the left front cover by removing the three silver screws.



### ***Cover, rear removal***

1. Open the top unit.
2. Remove the three silver screws from the rear cover, and then remove the cover.

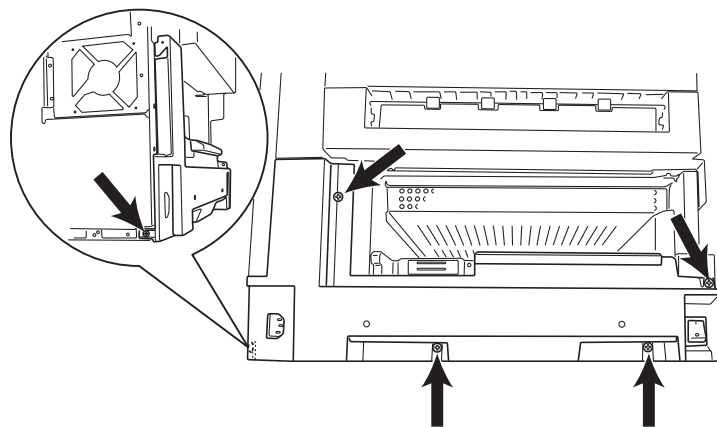


### ***Cover, solenoid removal***

1. Remove the screw from the solenoid cover.
2. Remove the solenoid cover.

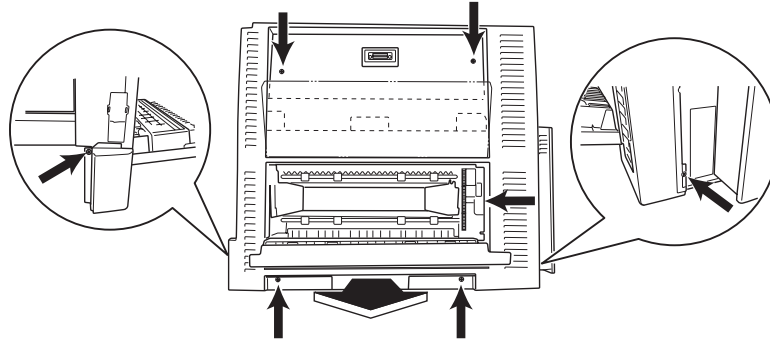
### ***Cover, left side removal***

1. Remove the upper cassette, front cover, paper exit tray, and duplex unit.
2. Remove the five screws from the left side cover, and remove the cover.

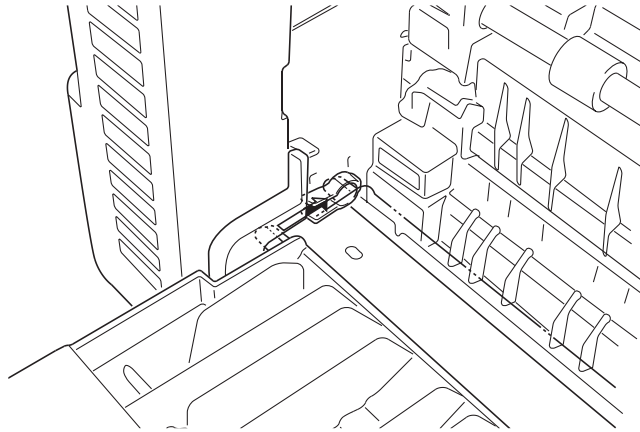


### Cover, right side removal

1. Open the top unit, and remove the front cover and upper cassette.
2. Remove the operator panel cable and the USB cable from the operator panel.  
(See “**Front door / operator panel removal**”.)
3. Remove the seven screws from the right side cover together with the turn guide, and remove the cover.



4. When installing the right side cover, insert the turn guide shaft into the bearing.



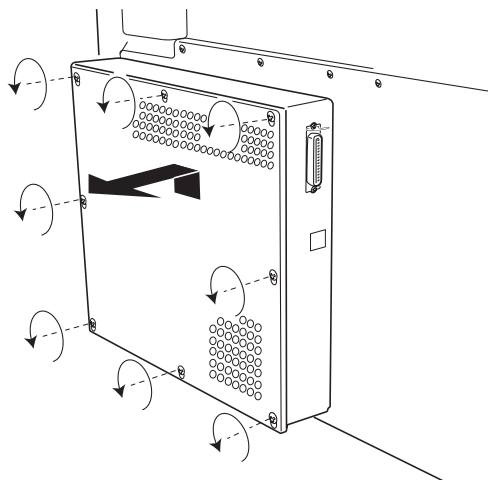
## Cover, RIP board removal

**Warning:** If the operator panel and the RIP board are being replaced at the same time, replace the parts in this order to avoid damage to the machine.

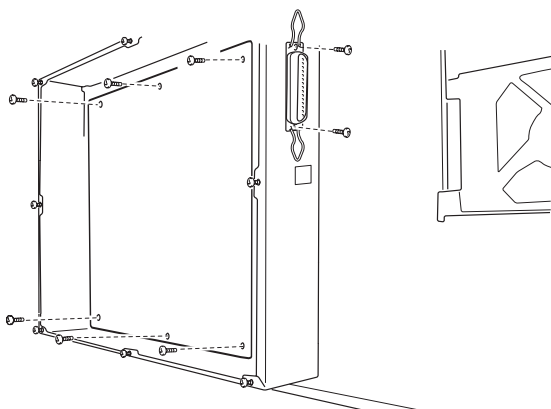
1. *Replace the RIP card first* (this must be the first part replaced).
2. Restart the printer. Let the machine finish the startup cycle. This takes a few minutes. The machine is silent when startup is complete.
3. Install the new operator panel.
4. Restart the printer, and let the startup cycle complete.

If the above procedure fails, you must contact the technical support center for further instructions.

1. Loosen the eight screws, and remove the RIP cover by sliding upward.



2. Disconnect all harnesses except for the processor fan (J25) from the RIP board connector.

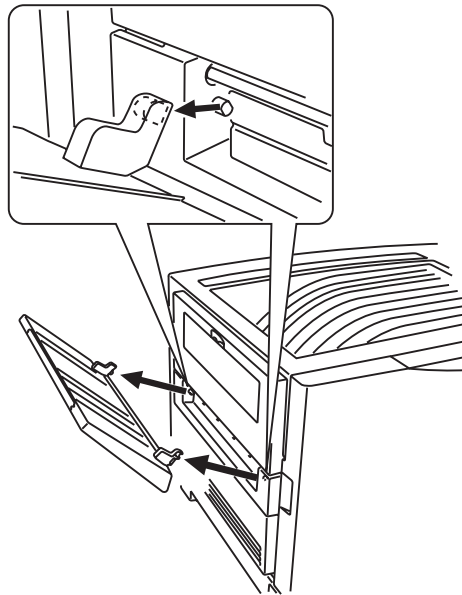


3. Remove the two screws from the parallel port connector and the screw from the USB connector.
4. Remove the eight screws from the RIP board together with the parallel connector, and remove the RIP board.

**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

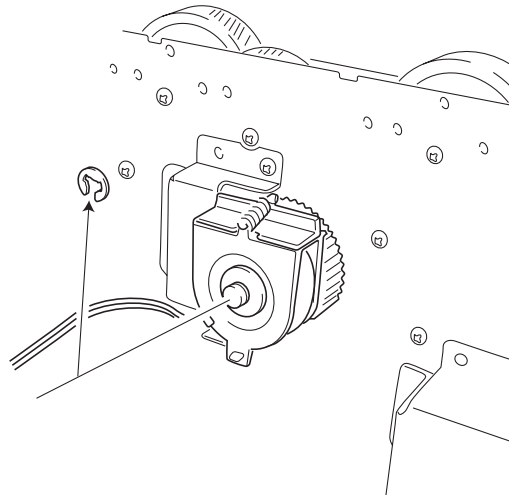
### ***Tray, paper exit removal***

1. Unlatch the hinge at the back side, then unlatch the hinge on the front side.
2. Remove the paper exit tray.



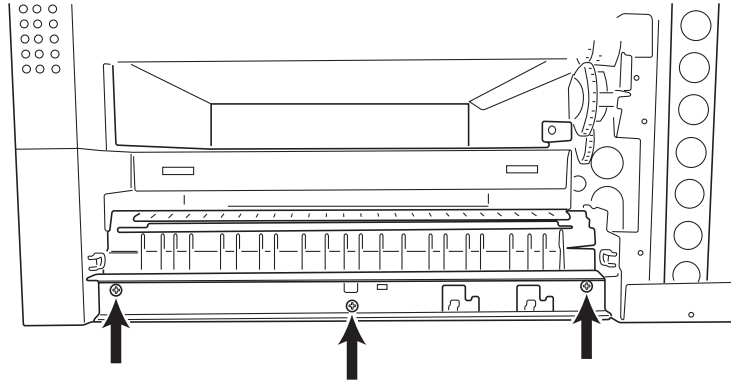
### ***Belt up/down clutch removal***

1. Remove the RIP cover, electronic box, printer controller card, and HVPS board.
2. Unplug the belt up/down clutch cable from CN1 in the CK1 daughter card board.
3. Remove the C-clip from the belt up/down clutch, and remove the clutch.



### ***Cassette guide removal***

1. Remove the paper feed frame.
2. Remove the front cover, cassette, turn guide, right side cover, and paper feed frame.
3. Remove the screws from the cassette guide, and remove the guide.



### ***CK1 daughter board removal***

1. Remove the front, right, left rear, and rear covers.
2. Remove printer controller board and HVPS board.
3. Disconnect all cables from the daughter board.
4. While pinching the nylon standoffs that attach the card to the printer frame, gently pull the CK1 daughter board away from the printer frame.

**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

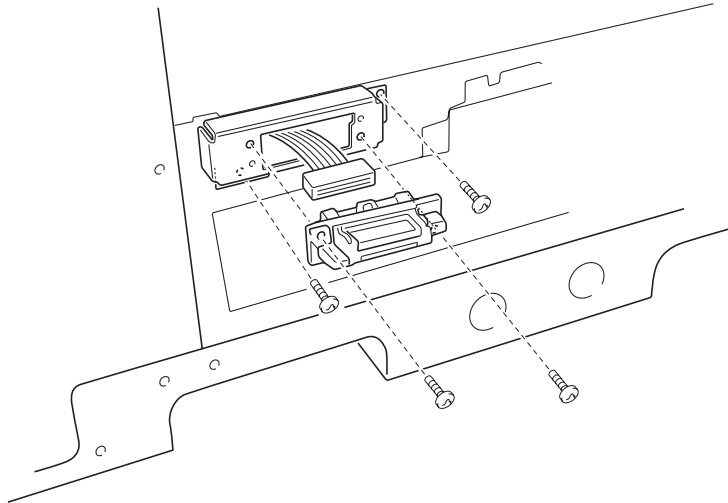
### ***CK2 daughter board removal***

1. Remove the front, right, left rear, and rear covers.
2. Remove power supply 1.
3. Unplug all cables from the daughter board.
4. Remove four screws from the daughter board, and remove the board.

**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

### ***Connector, duplex unit removal***

1. Open the top unit and remove the upper cassette, left front cover, paper feed cover, left side cover, RIP cover, RIP board, RIP box, and the electronic box. Remove the turn guide, open the paper feed cover, and remove the duplex unit. Remove the left side cover and power supply A.
2. Disconnect the connector, and remove the two screws from the mounting plate.
3. Remove the two screws of the drawer connector from the mounting plate drawer bracket.

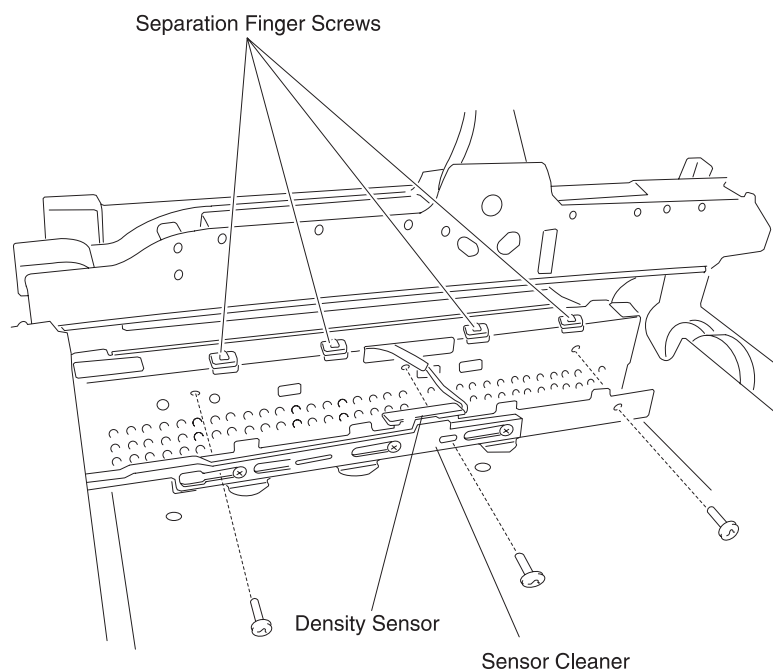


### ***Paper tray lift motor removal***

1. Remove the front, right, left rear, and rear covers.
2. Remove the cassette.
3. Disconnect the cable from the paper tray lift motor.
4. Remove the three black screws from the paper tray lift motor.
5. Remove the paper tray lift motor.

### ***Density sensor removal/Separation fingers removal/Sensor cleaner removal***

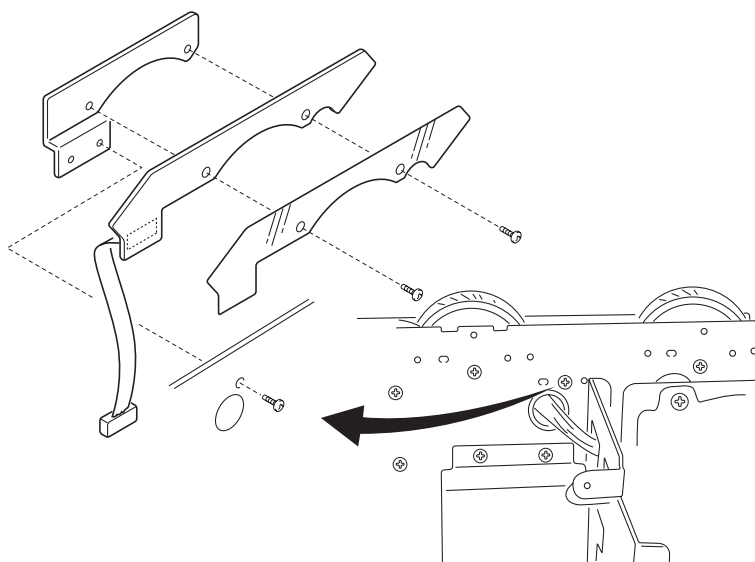
1. Open the top unit and remove the belt unit.
2. Remove the three screws from the sensor bracket.



3. Remove the harness band and remove the two screws from the density sensor from the sensor bracket.
4. Remove the three set screws from the sensor cleaner assembly from the sensor bracket.
5. Remove the four separating finger screws from the fuser entrance guide.

### ***Drive gear unit sensor assembly removal***

1. Open the top unit, and remove the gear cover, RIP cover, RIP board, RIP box, electronic box, printer controller, and high voltage power supply board.
2. Remove the screw from the drive gear unit sensor assembly.

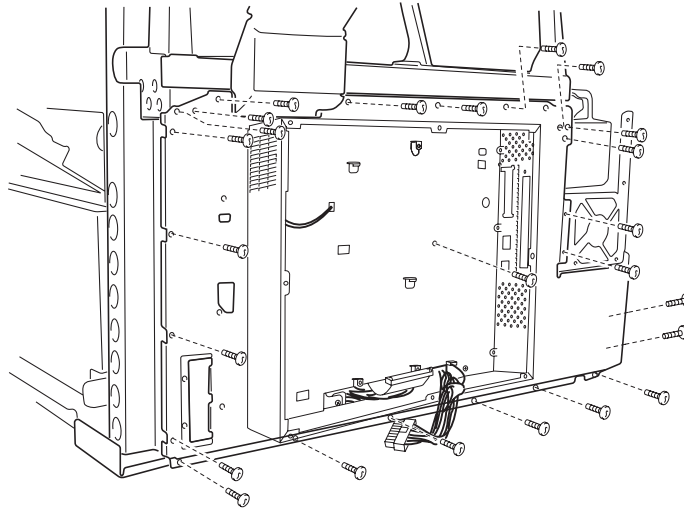


3. Remove the two screws of the drive gear unit sensor from the drum drive gear sensor assembly.



## ***Electronic box removal***

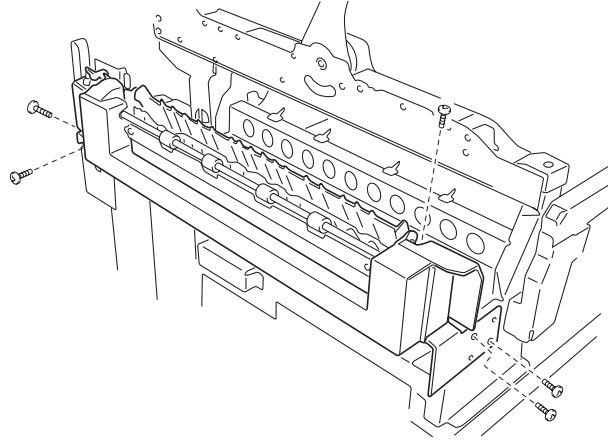
1. Open the top unit, and remove the back cover.
2. Remove the RIP board cover.
3. Remove the RIP board.
4. Remove the screws from the electronic box.



5. Disconnect all cables from the rear of the electronic box, and remove the box.

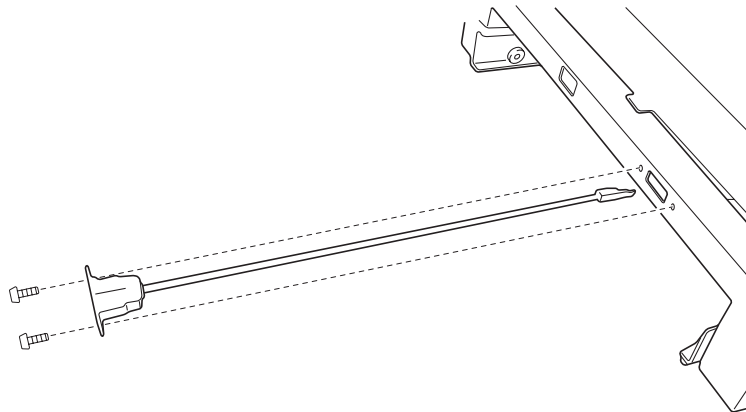
### ***Face up paper exit assembly removal***

1. Open the top unit, and remove the upper cassette. Open the duplex cover, and remove the duplex unit.
2. Remove the left front cover, left side cover, and rear cover.
3. Remove the three screws from the face up delivery assembly, and remove the assembly.



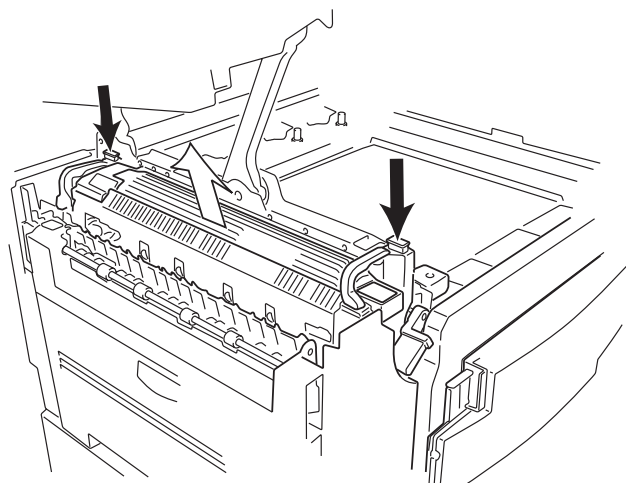
### ***Front cover open switch actuator removal***

1. Open the front cover.
2. Remove the two screws from the front cover open switch actuator.



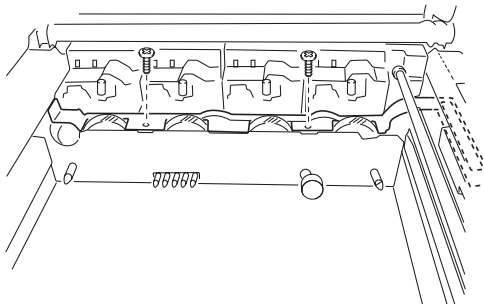
## ***Fuser removal***

1. Open the top unit.
2. Pushing the front and back lock, hold the handle, and then raise and remove the fuser.

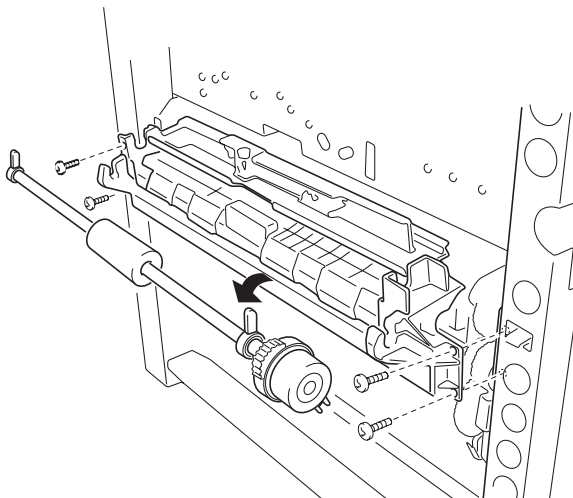


## ***Gear cover removal/Multipurpose feeder frame assembly***

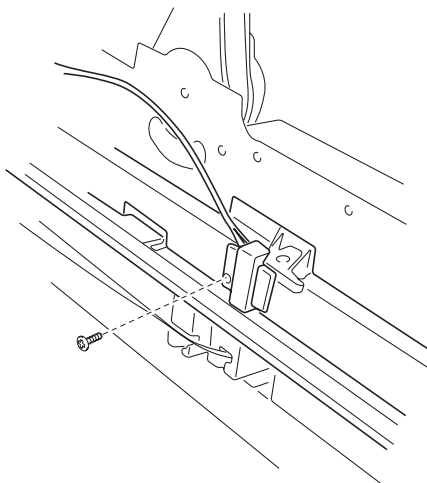
1. Open the top unit, and remove the upper cassette, front cover, multipurpose feeder, right side cover, and turn guide.
2. Remove the two screws from the gear cover, and remove the cover.



3. Remove the four screws from the multipurpose feeder frame and the ground screw.



4. Disconnect the connector of the multipurpose feeder paper feed sensor.
5. Pull out the multipurpose feeder frame slightly.
6. Remove the screw from the OHP detection sensor (upper).



7. Turn the bearing stopper of the multipurpose feeder roll forward 1/4 turn, and remove upward.
8. Remove the multipurpose feeder frame assembly.

## High voltage power supply board (HVPS) removal

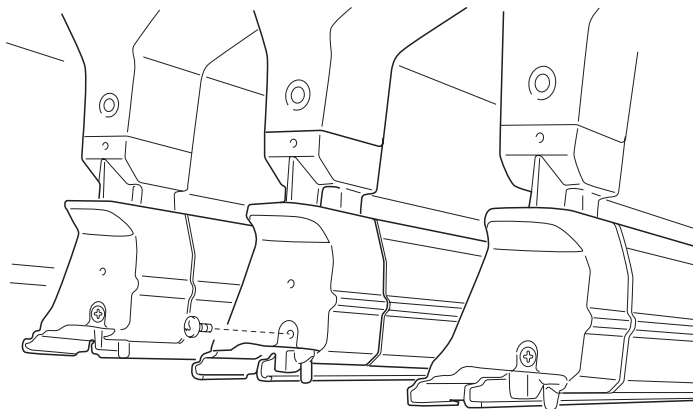
**Note:** When removing the high voltage power supply, be careful to avoid damaging the secondary daughter card (Q906). If the daughter card gets damaged, a 925 service error will result.

1. Open the top unit, and remove the RIP cover, RIP board, RIP box, electronic box, and printer controller board.
2. Remove the five screws from the printer controller board bracket.
3. Remove the connectors, and then remove the 12 screws.
4. Remove the HVPS board.

**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

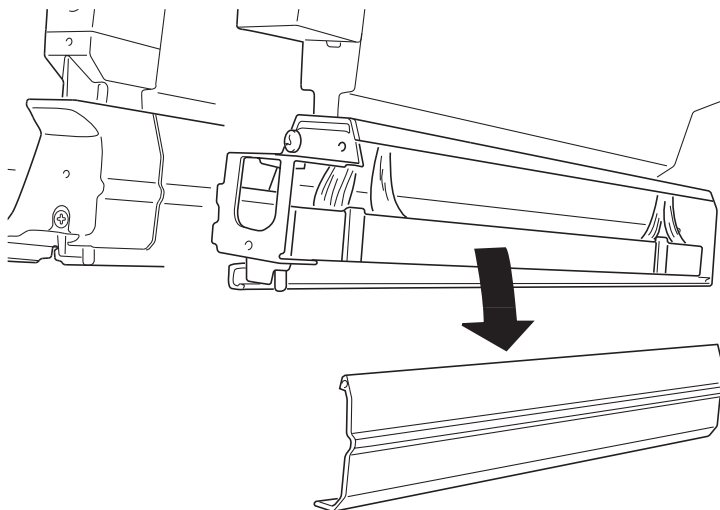
## LED printhead removal

1. Open the top unit, remove the top cover, toner cartridges, and photodeveloper drum units.



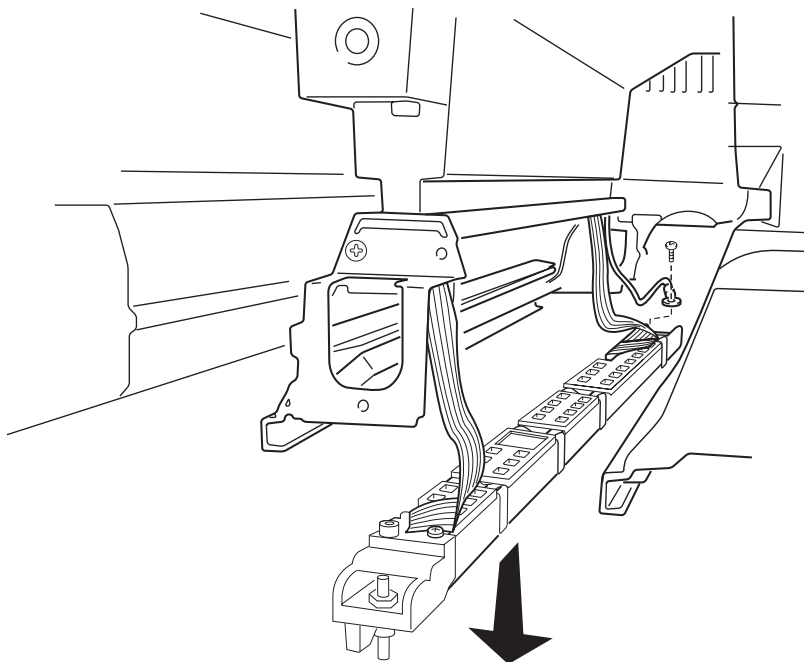
**Note:** Remove the transfer belt, or spread a cloth or paper over the transfer belt to protect it from damage.

2. Remove the short black screw from the printhead holder, and remove the holder.
3. Remove the front and rear printhead springs.
4. Remove the two screws (front and rear) from the right slide rail, and remove the rail.



**Note:** When replacing the rail, be sure to use the short black screw. A longer screw can interfere with the LED head causing the image to be out of focus.

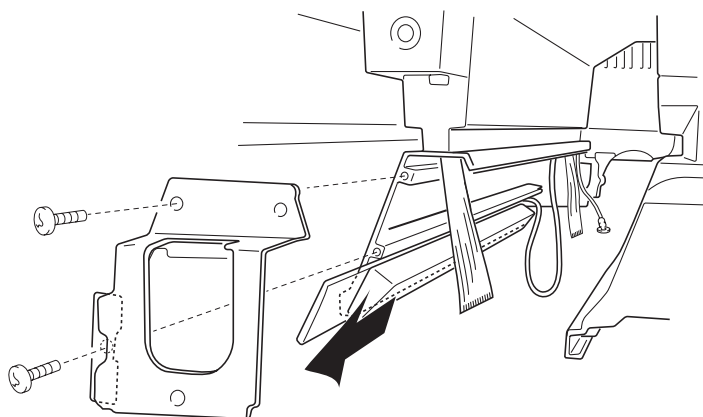
5. Disconnect the affected LED printhead connectors from the printhead controller board. Remove the screw from the ground wire located on the LED printhead.



6. Remove the LED printhead and the cables from the printer.  
When replacing the LED printhead, replace the corresponding EEPROM, shipped with the printhead, on the printhead controller board.  
**Note:** The LED printhead light intensity values do not have to be entered for the printer.

### Eraser removal

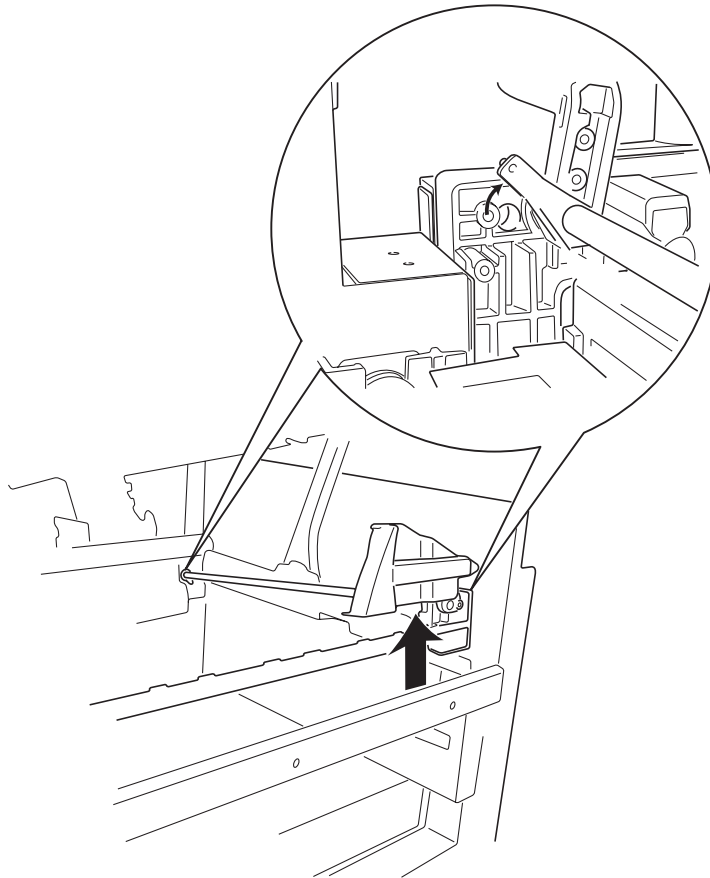
1. Remove the appropriate printheads (see **“LED printhead removal” on page 4-20**). Spread a cloth over the transfer belt to protect it from damage.
2. Remove the two screws from HSP holder, and remove the holder.



3. Remove the top cover.
4. Disconnect the eraser cable from the printhead controller board.  
C– CN06  
M– CN05  
Y– CN07  
K– CN08
5. Carefully thread the eraser cable through the upper unit and remove the eraser.

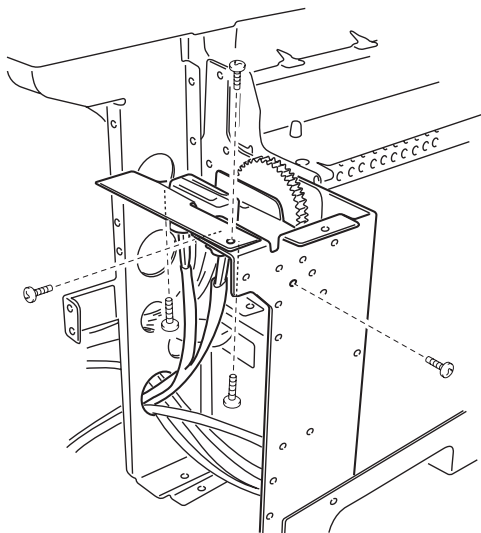
### ***Lock handle assembly removal***

1. Open the top unit.
2. Turn the plastic latch on the front and rear sides 90°.
3. Remove the spring.
4. Remove the lock handle assembly.

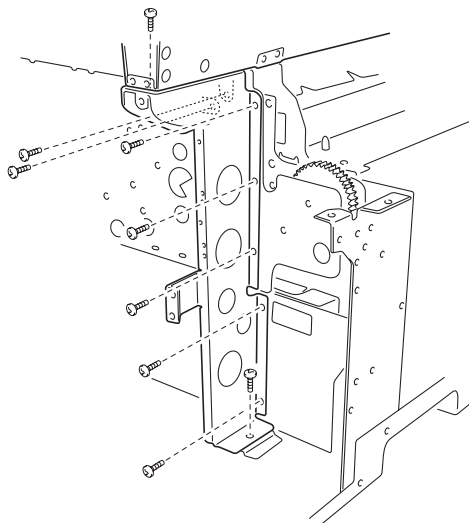


## Main drive unit removal

1. Open the top unit, and remove the gear cover, upper cassette, left front cover, paper feed cover, RIP cover, RIP board, RIP box, electronic box, and rear cover.
2. Open the turn guide and paper feed cover, and remove the duplex unit.
3. Remove the left side cover, power unit 1, and power unit 2.
4. Remove the printer controller board.
5. Remove the bracket, HVPS board, and sub frame R.
6. Remove the fuser unit, face up paper delivery unit, belt up/down clutch, and DC drive motor.
7. Remove the multipurpose feeder roll, registration roll, and paper carrying frame.
8. Remove the eight screws from the power supply 2 bracket.
9. Remove the two screws from the belt power supply 2.
10. Remove the two screws from the fan bracket.
11. Remove the three screws from the fuser connector plate.



12. Remove the two screws of the fuser connector cable assembly from the fuser connector plate.

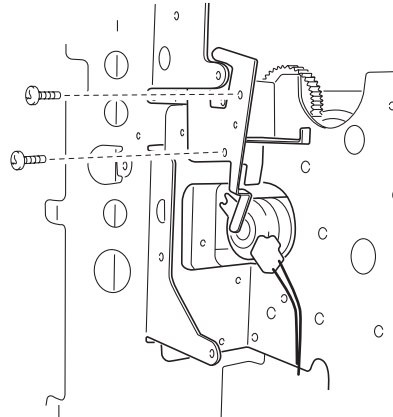


**Note:** Note the direction, when installing.

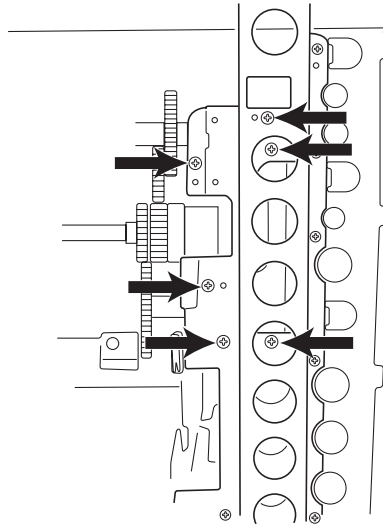
13. After removing the two screws on the bracket that attaches the rear side and paper exit side of the machine, remove the nine screws from the bracket.



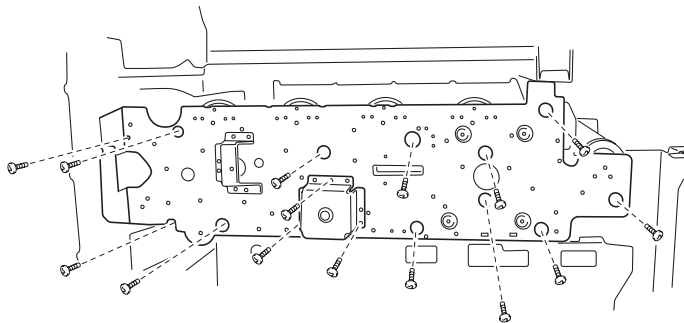
14. Remove the screw from the clutch stopper. The clutch stopper is attached to the ground plate with two screws.



15. Remove the six screws on the right side.



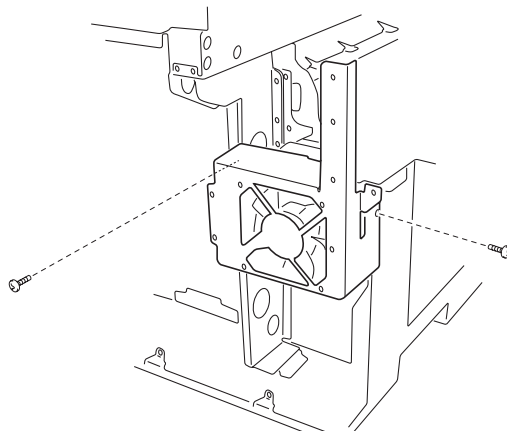
16. Remove the two screws from the drive unit, and remove the unit.
17. Remove the E-clip on the belt up/down clutch, and remove the changing shaft from the drive unit.
18. Remove the three screws from the belt up/down clutch box, and remove the belt up/down clutch.



19. Remove the screw from the drum gear sensor, and remove the sensor.

### **Main unit fan removal**

1. Remove the left side cover, the solenoid cover, and the rear cover.
2. Remove the LVPS (low voltage power supply) 1.
3. Remove two screws from the main unit fan bracket.



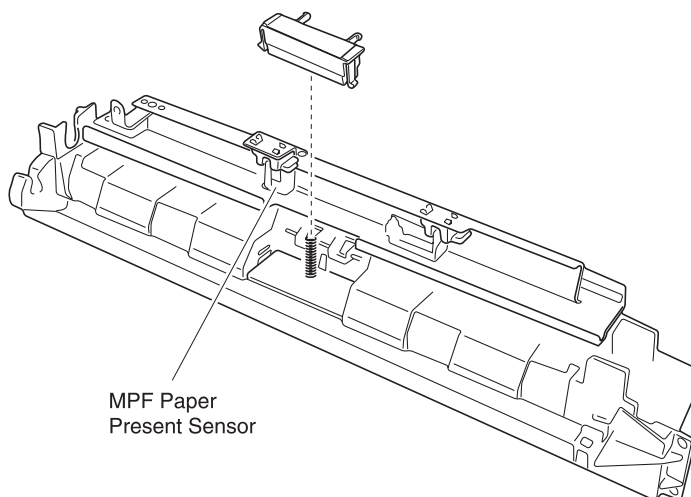
4. Disconnect the fan power cable from CN6 on the CK2 daughter card board.
5. Remove the fan.

### **Motor drive board removal**

1. Remove the upper cassette, front cover B, paper feed cover, and the left side cover.
2. Disconnect the five connectors, remove five screws, and remove two screws from the motor drive board.

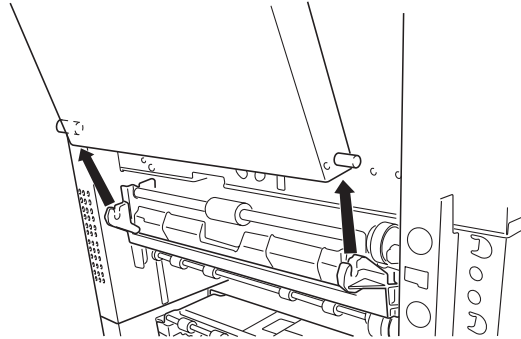
### **Multipurpose feeder paper present sensor removal**

1. Open the top unit and remove the upper cassette, front cover, turn guide, multipurpose feeder, right side cover, turn guide, and multipurpose feeder frame.
2. Disconnect the connector and remove the multipurpose feeder paper present sensor.



## ***Multipurpose feeder tray removal***

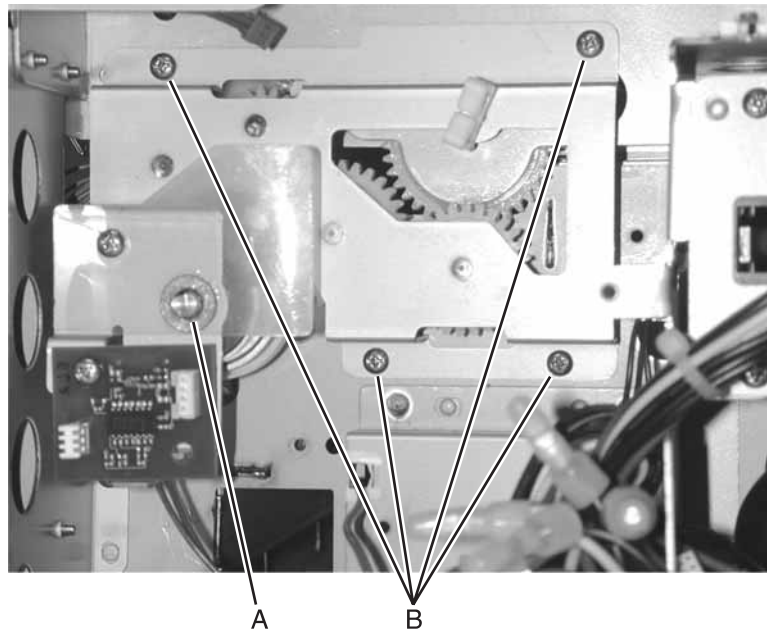
1. Open the top unit, and remove the front cover, cassette feeder, turn guides and right side cover.



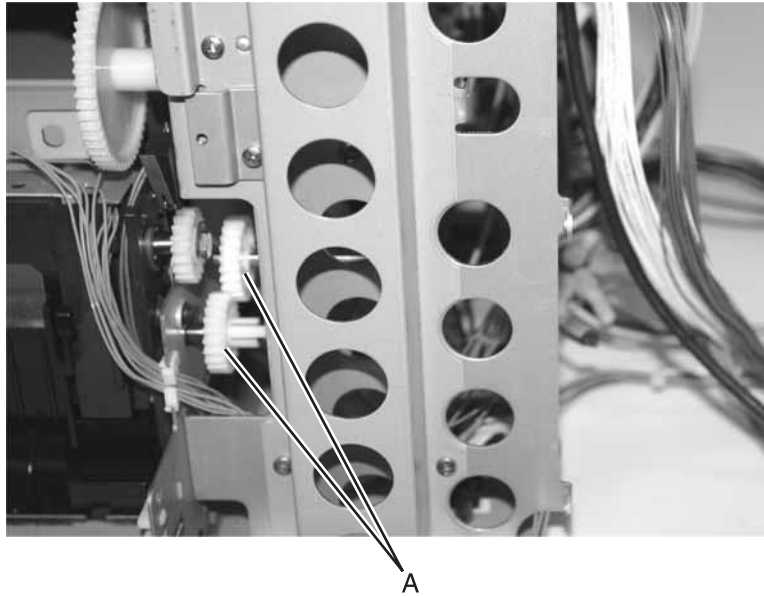
2. Open the multipurpose feeder and slide it toward the magnet in the direction of the arrow, removing it from the printer.

## ***Paper feed unit removal***

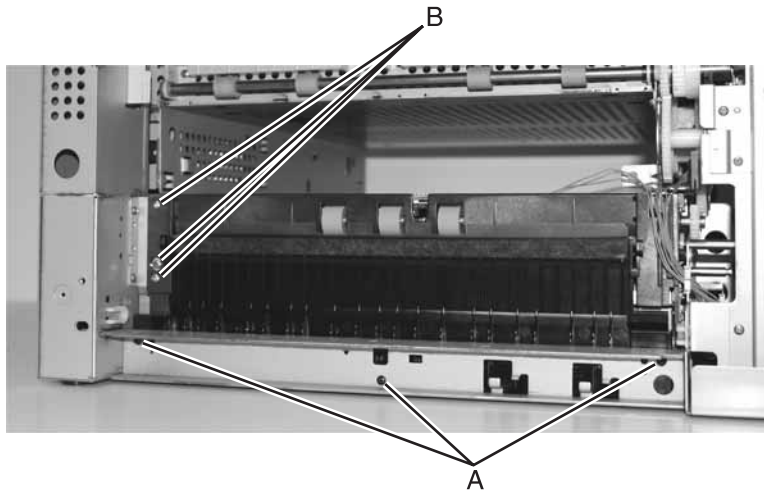
1. Remove the front, right, left rear, and rear covers.
2. Remove the printer controller board and HVPS board.
3. Unplug connectors CN23, CN16, CN10, CN20, CN12, CN15, and CN7 on the CK1 daughter card board.
4. Remove the e-clip and bushing (A) from the paper feed clutch.
5. Remove four screws (B) from the paper feed gear unit.



6. Remove the paper feed gear unit, paper feed clutch, and two gears (C) not held in place with an E-clip.



7. Remove the 3 screws (D), and remove the cassette guide.



8. Remove the brass screws (E) on the left side of the paper feed unit.
9. Remove the paper feed unit, being careful to route the sensor cabling through the wire guides.

## ***Paper-feed rollers removal***

### **Paperpath maintenance**

A paper path maintenance kit can be used when a machine is experiencing misfeeds and jams after 200,000 pages. The order number for this kit is 40X1109. The kit is composed of the following parts:

56P9683	Carrying roller
40X1154	Registration frame
40X1077	Pickup roll
40X1078	Paper feed roll
40X1079	Separator roll
40X1064	FD paper exit roller

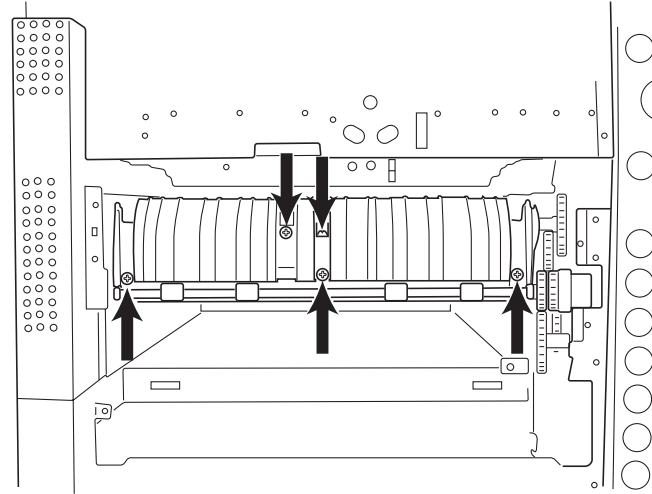
In addition to the paper-path maintenance kit, the relay roller (40X1108) and turn guide rollers (40X1072) can be ordered.

**Note:** This removal can be used for the expansion paper feed roller removal. Do not discard the white plastic retaining clips. They will be needed to attach the new rollers.

1. Turn off the printer, and unplug the power source.
2. Remove the paper cassette.
3. Pull back on the tab, and remove the pickup roller.  
**Note:** There is a small blue tab on the pickup roller.
4. Remove the white plastic retaining clip from the shaft, and slide the paperfeed roller (B) off the shaft.
5. Remove the white plastic retaining clip, and slide the separator roller (C) off the shaft. The torque limiter (D) can be removed by sliding off the shaft if it needs replacement.

### ***Paper carrying frame removal / roll removal***

1. Open the top unit, and remove the upper cassette, front cover, turn guide, multipurpose feeder, right side cover, turn guide, OHP detection sensor (upper), multipurpose feeder frame, back cover, RIP cover, RIP board, RIP box, and electronic box.
2. Remove the four screws from the paper carrying frame.



3. Remove the paper carrying frame.

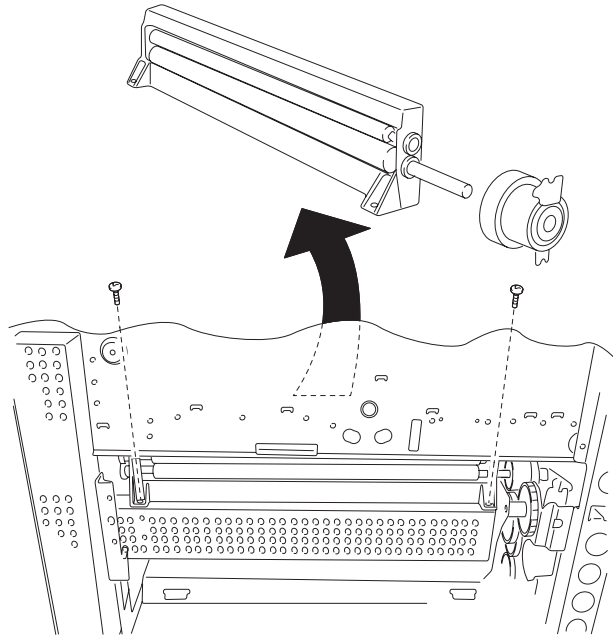
**Note:** When installing, the clip of the paper carrying clutch should be securely set to the stop, and the shaft of the paper-carrying clutch and spring should be securely in contact with one another.

4. Remove the carry clutch and plastic bushing on the left side of the carrying frame.
5. Remove the E-clip and bushing on the right side of the carrying frame.
6. Remove the carrying roller.

## Registration frame

### Registration clutch removal

1. Open the top unit, open the turn guide, open the paper feed cover, and pull out the duplex unit halfway.
2. Remove the two screws from the registration frame.

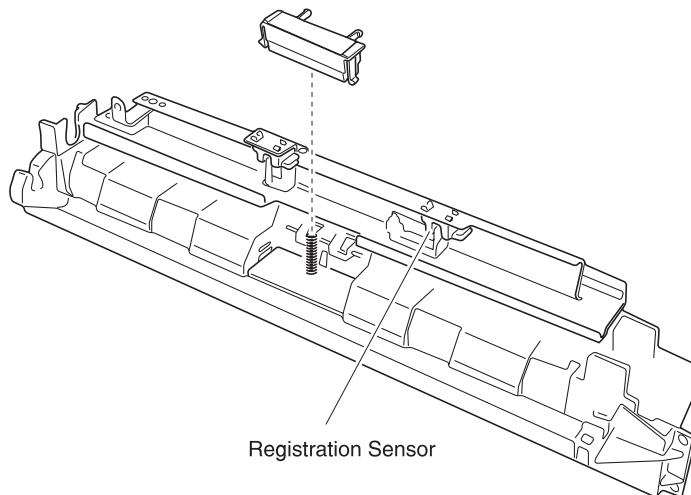


3. Remove the registration clutch.

**Note:** When installing, set the clip of the registration clutch to the stopper.

### Registration sensor removal

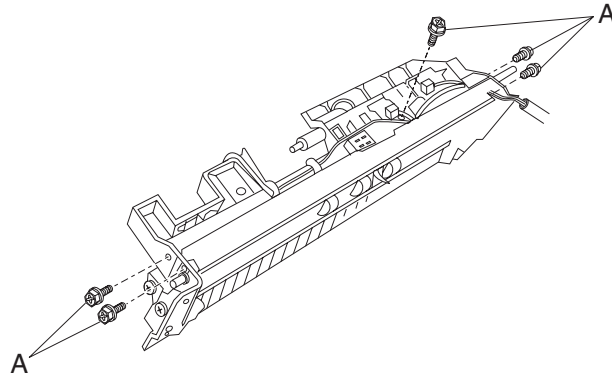
1. Open the top unit, and remove the upper cassette, front cover, turn guide, multipurpose feeder, right side cover, and multipurpose feeder frame.
2. Disconnect the connector of the registration sensor, and remove the sensor.



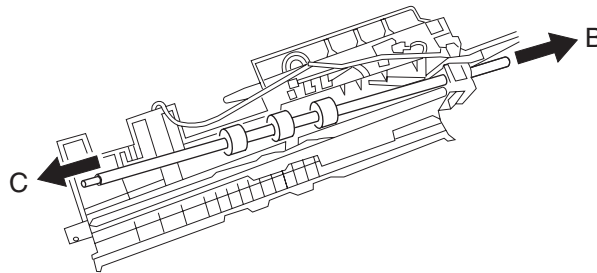
## Relay roller removal

**Note:** This removal can be used for the expansion paper-feed unit relay roller removal as well.

1. Remove the paper feed unit from the machine.
2. Remove the e-clips and bushings from each end of the relay roller shaft.
3. Remove the five screws (A) that hold the top metal plate on the unit.



4. Remove the top plate from the paper-feed unit.
5. Slide the relay roller to the right (B), and tilt the roller up and out of the unit.

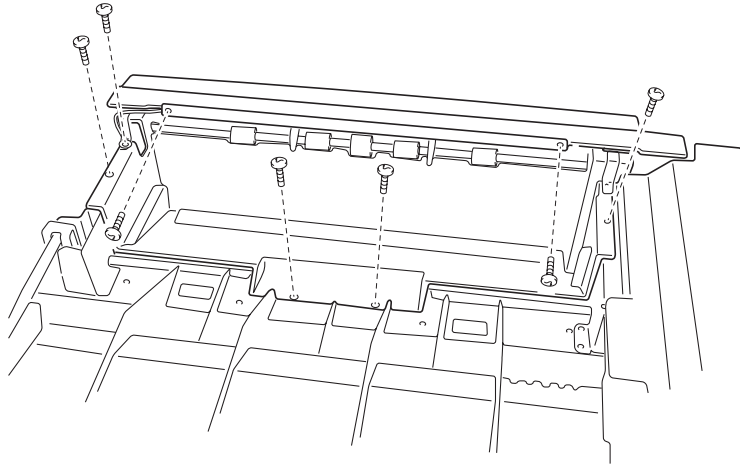


6. Pull the relay roller to the left (C), and remove the roller from the paper-feed unit.



### Face down guide assembly removal

1. Remove the top cover.
2. Disconnect the connector, and remove the five screws and two snap bands from the face down guide assembly.



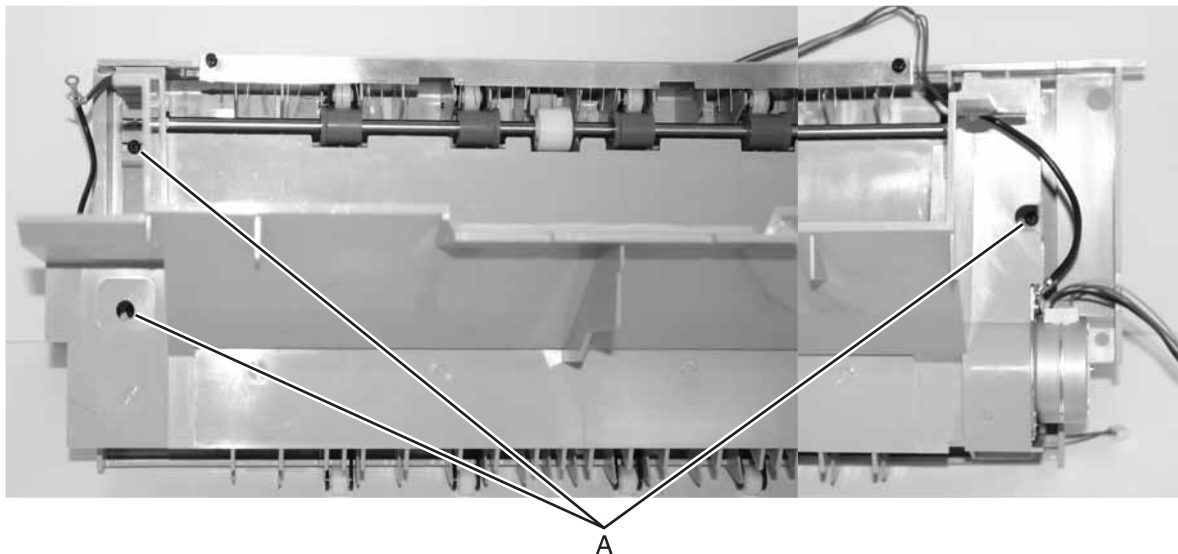
3. Remove the four screws from the face down cover and the face down guide assembly, and remove the assembly.

**Note:** When replacing the face down unit, use a tie to hold back the wiring that connects the printer controller board to the face down unit. Avoid pinching or cutting wiring that connects the face down unit to the printhead controller board.

### Face down exit roll removal

**Note:** When replacing the face down exit roller, lubricate the ends of the roller shaft with a small amount of Nyogel 744 (part number 40X0179). Open the top unit, and remove the toner cartridges, photodeveloper drum units, and upper cover.

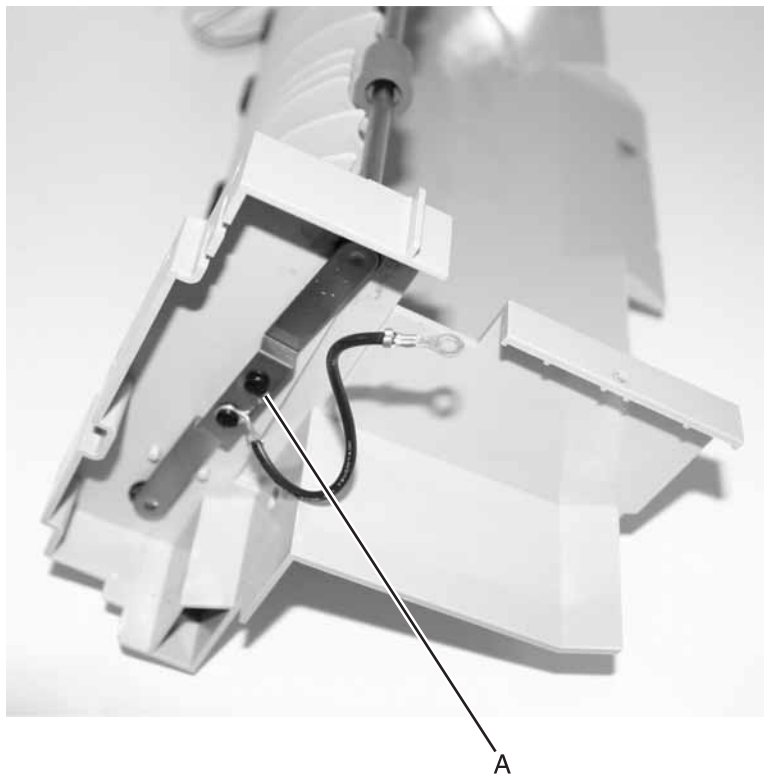
1. Remove the face down unit from the printer.
2. Remove the three screws (A) that hold the rear cover to the face down unit.



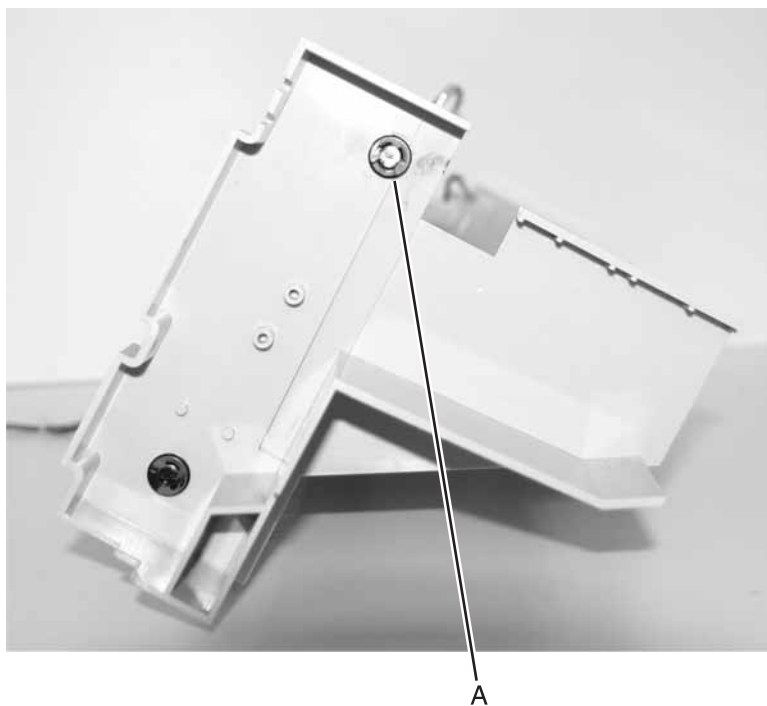
3. Remove the rear cover.



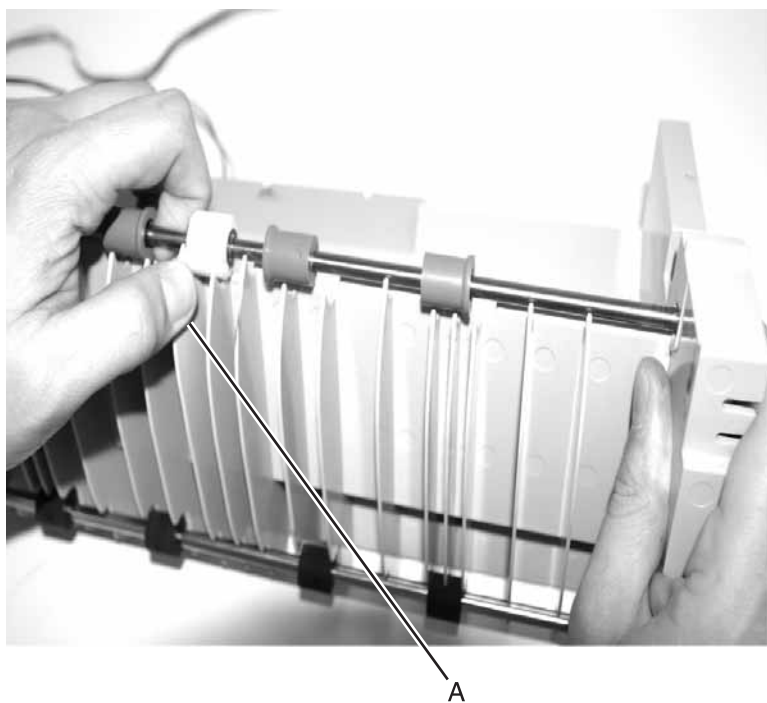
4. Remove the motor and drive belt from the exit roller shaft.
5. Remove the grounding strip (A).



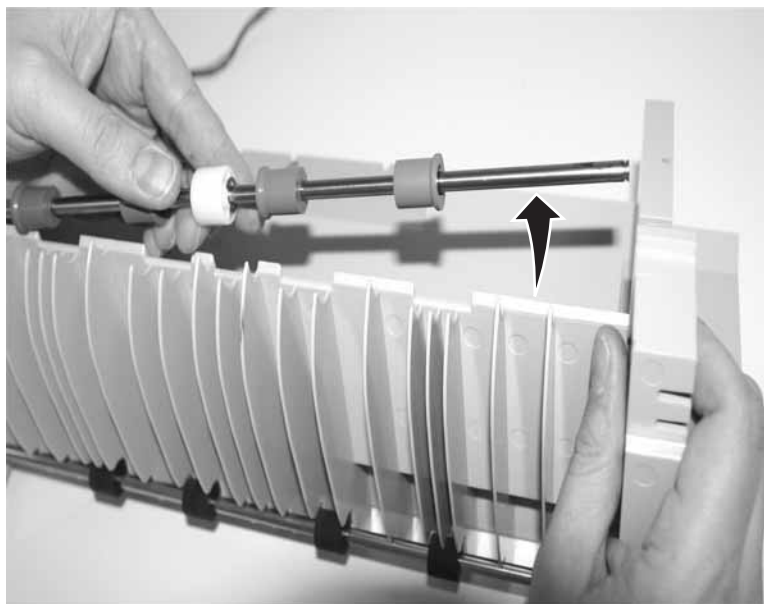
6. Remove the e-clips and bushings (A) from both ends of the exit roller shaft.



7. Pull the guide rib (A) to the left.



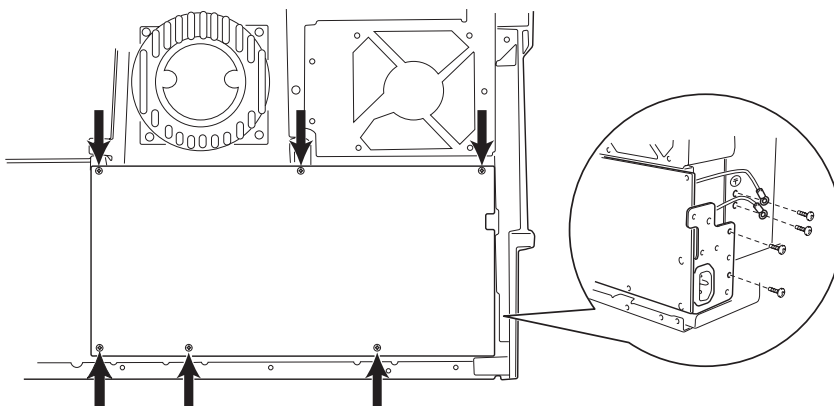
8. Remove the exit roller.



### ***Power supply 1 removal***

1. Unplug the power cord from the printer.
2. Open the top unit, and remove the RIP cover, RIP board, RIP box, and electronic box. Remove the cassette, left front cover, and back cover. Remove the left side cover.
3. Remove the insulation sheet connector, yellow ground wire, five screws, two screws with washers, and two screws with spring washers.
4. Disconnect CN106 and CN04 at power supply 2.
5. Remove the power supply.

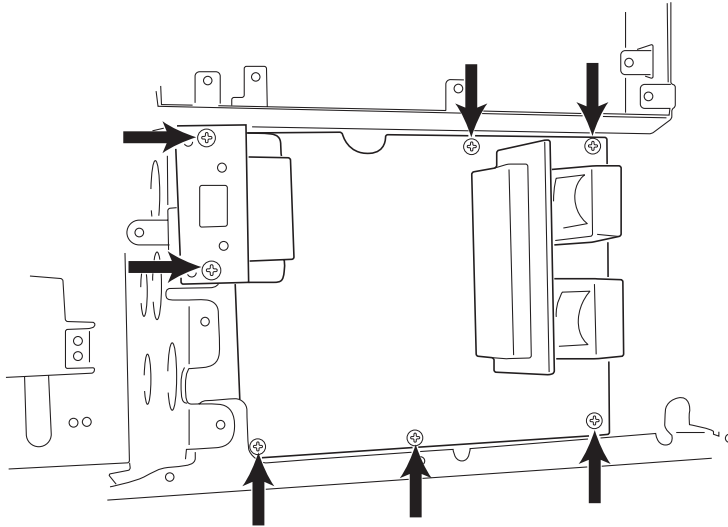
**Note:** When installing, incline the ground wire by 45°.



**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

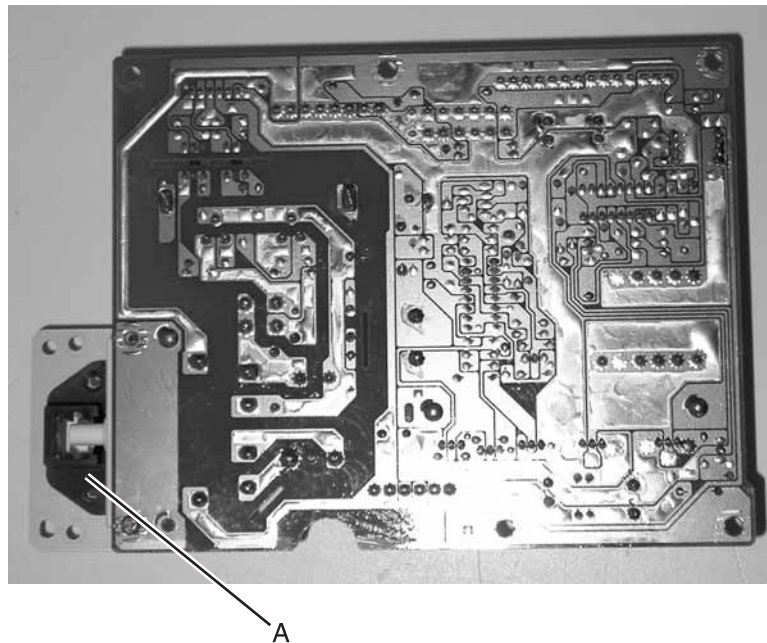
## Power supply 2 removal

1. Unplug the power cord from the printer.
2. Open the top unit, and remove the RIP cover, RIP board, RIP box, and electronic box.
3. Disconnect the connector, and remove the seven screws from power supply 2, and remove the power supply.



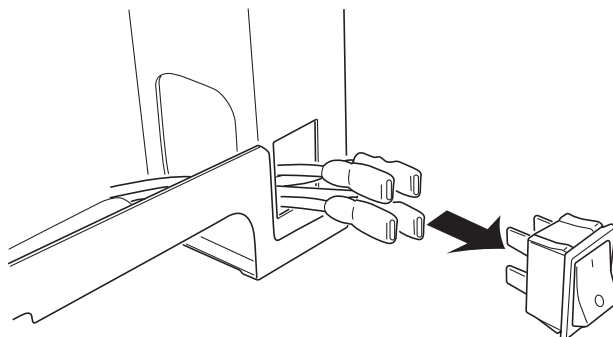
**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

**Note:** Before installing the new power supply, remove the black actuator guide (A) from the old power supply and install it on the new power supply.



## Power switch removal

1. Remove the upper cassette, left front cover, paper feed cover, and left side cover.
2. Unlock the power switch, and pull out the power switch.

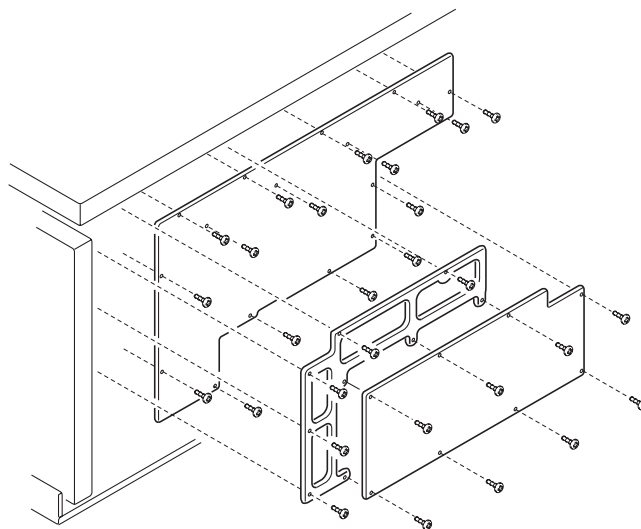


3. Remove each terminal connected to the power switch.

**Note:** When connecting, be careful to connect the connectors correctly. Insert the insulator cover, completely covering the terminal.

## Printer controller removal

1. Open the top unit, and remove the RIP cover, RIP board, RIP box, and electronic box.
2. Remove the connectors and the screws from the printer controller. Pay attention to the location, or label the two pin connectors when removing them from the board to avoid reconnection into the wrong location.

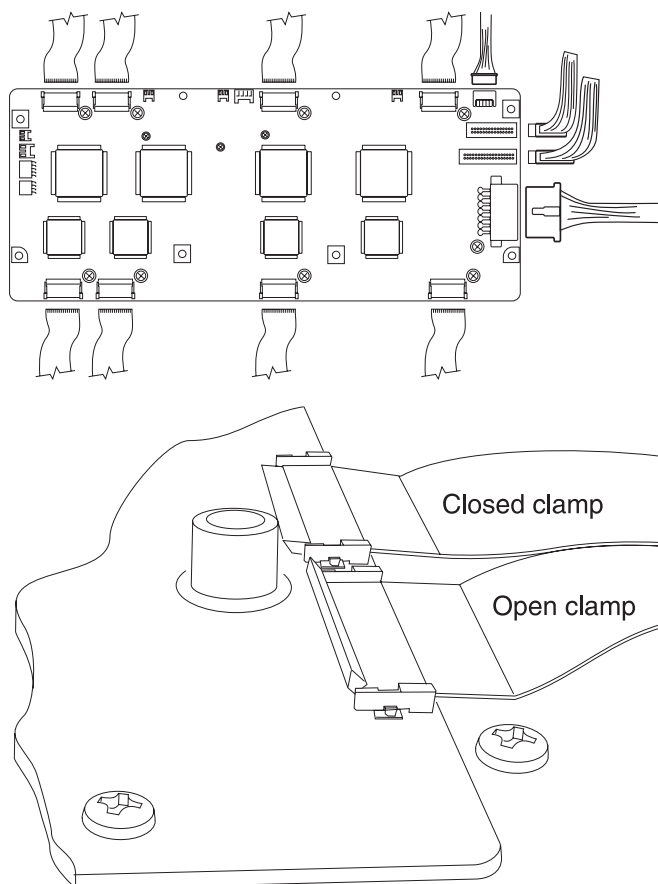


When replacing the board, install the EPROM (U7) of the former board to the new board. Also, when replacing the EPROM, set the light intensity in the diagnostic mode, and set the counter and printer alignment.

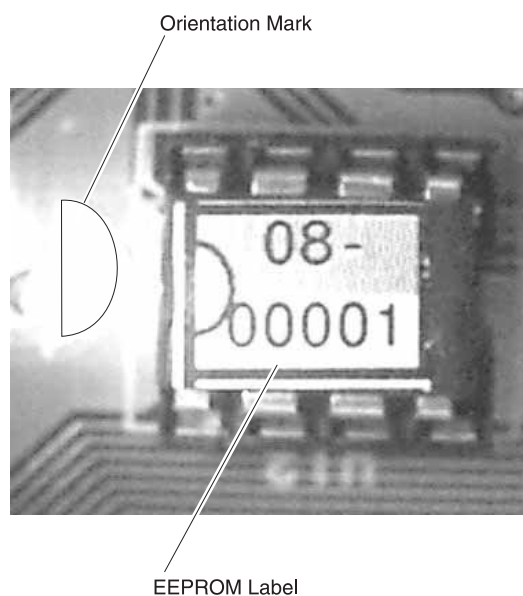
**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

## Printhead controller board removal

1. Remove the top cover, and then remove the 20 printhead controller board connectors.
2. Remove the six screws from the printhead controller board and remove the board.

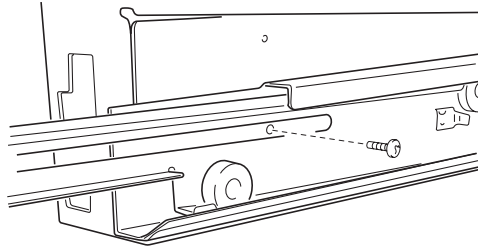


**Note:** When replacing the board, be sure to return the four EEPROMs on the former board to the same positions on the new board.



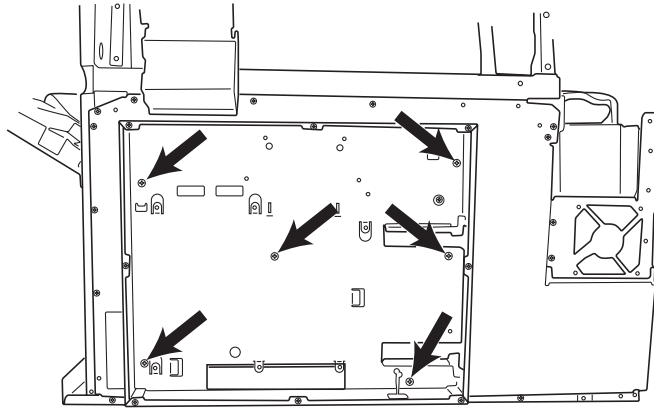
### ***Left slide rail removal***

1. Remove the upper cassette.
2. Remove the screw from both left and right slide rails.



### ***RIP box removal***

1. Remove the six screws from the RIP box.

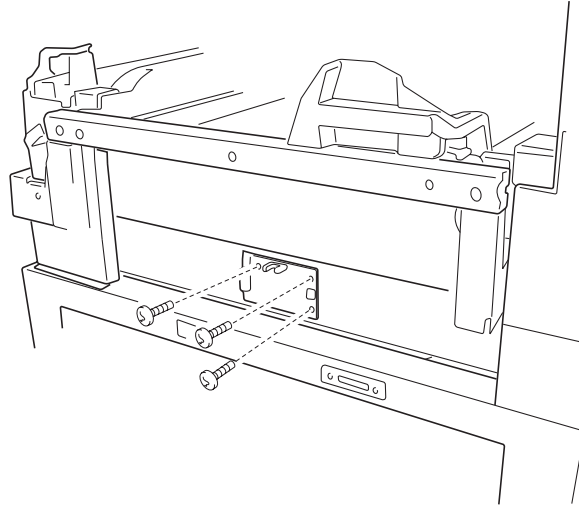


2. Slightly lift and remove the RIP box.



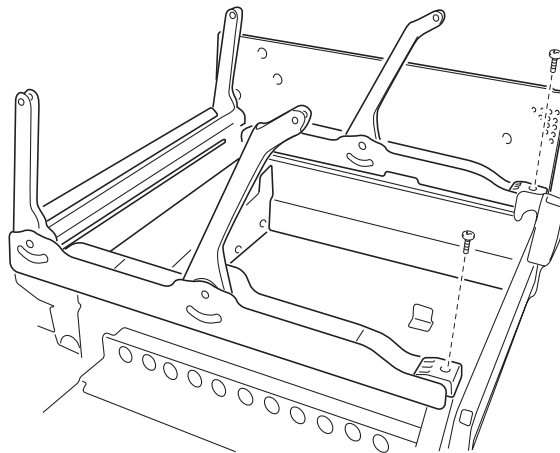
## ***Sensor board removal***

1. Remove the transfer belt unit.
2. Remove the four connectors.
3. Remove the three screws from the waste toner full sensor board.



## ***Stay arm removal***

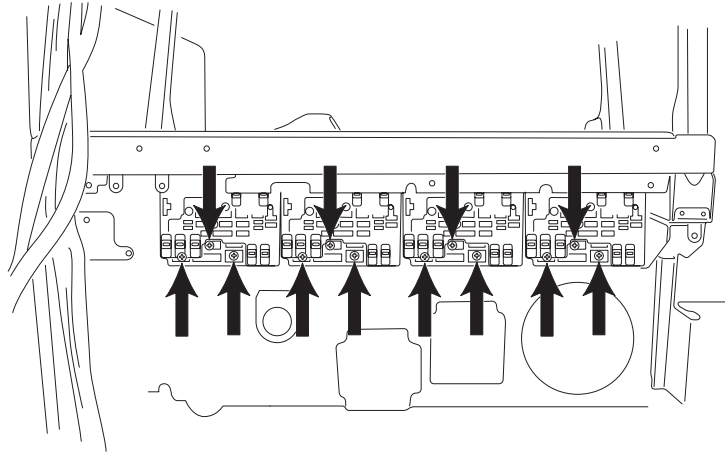
1. Open the top unit, and remove the face down paper guide assembly.
2. Remove the yellow and black sub frame.
3. Remove the screw from the right stopper, and remove the stopper.



4. Remove the screw from the left stopper, and remove the stopper.
5. Remove the clip from the lock shaft.
6. Remove the 17 screws from the stay arm, and remove the arm.

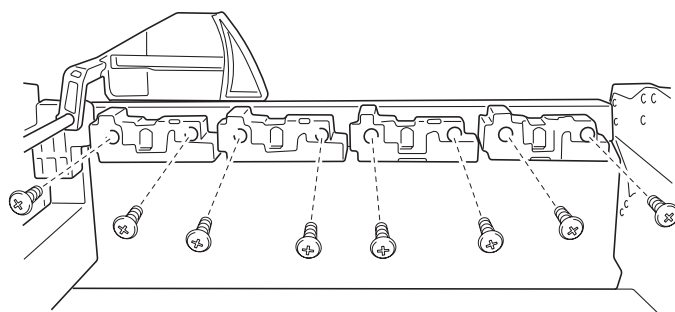
## Sub-frame removal

**Important:** Read the entire procedure before removal.



1. Open the top unit, and remove the RIP cover, RIP board, RIP box, electronic box, printer controller, printer controller bracket, and HVPS board.
2. Remove the cable ties.
3. Remove the 12 screws from the sub frame.
4. Remove sub frame.

## Sub frame F1, sub frame F2 removal

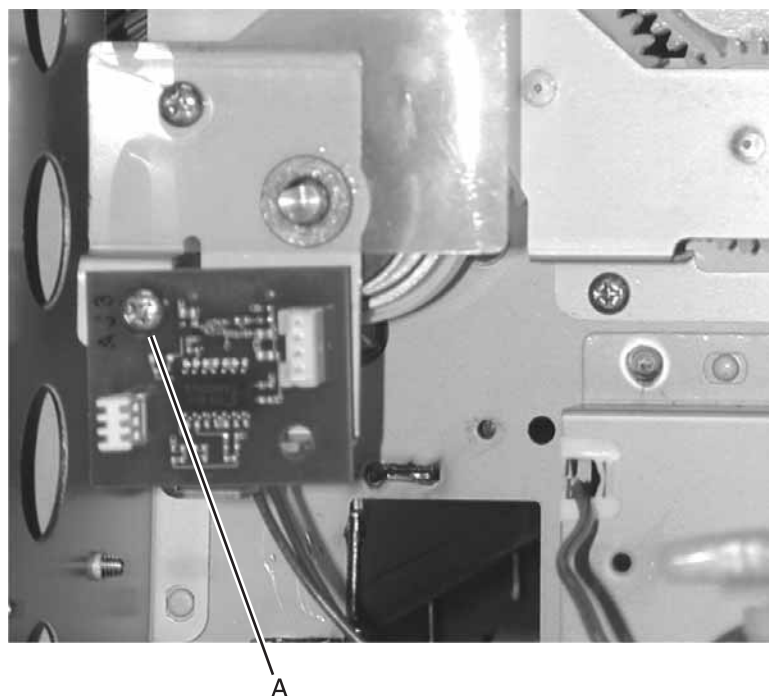


1. Open the top unit.
2. Remove the two screws from the sub frames F1 and F2.  
**Note:** Spread a paper or cloth over the belt to protect the belt. Set the sub frame F to the position of the following colors, depending on the presence of the upper detection buttons.

Magenta	Sub frame F1	Detection button available
Cyan	Sub frame F2	Detection button unavailable
Yellow	Sub frame F1	Detection button unavailable
Black	Sub frame F2	Detection button available

## Temperature/humidity sensor removal

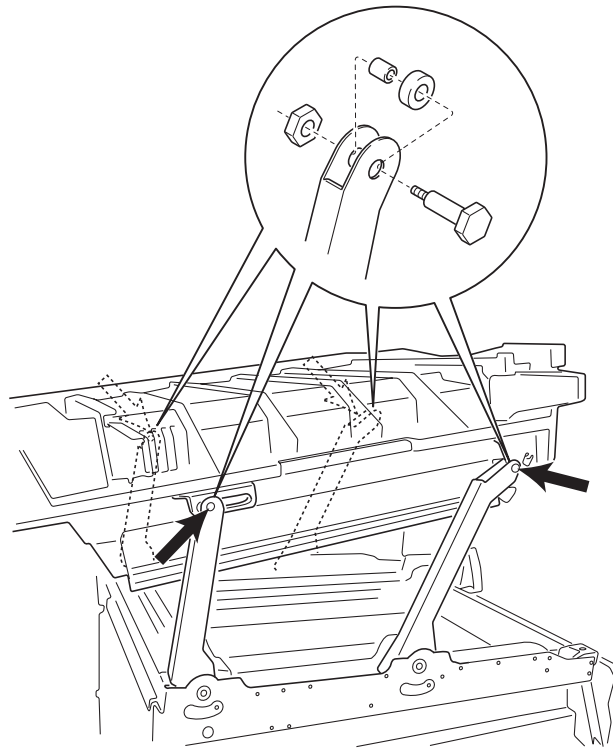
1. Remove the rear cover, printer controller board, and HVU board.
2. Disconnect the cable from connector on the temperature humidity sensor.



3. Remove the screw (A) holding the sensor to the paperfeed gear linkage.
4. Remove the temperature/humidity sensor.

## Top unit removal

1. Open the top unit, and remove the top cover and face-down guide assembly.
2. Remove the screws, and remove the top unit.



## Transfer belt removal

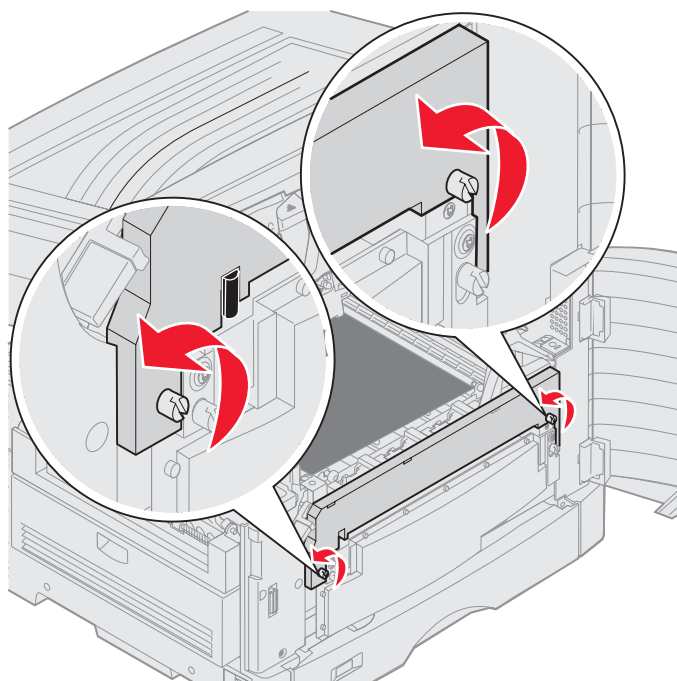
Transfer belt removal has been simplified with a redesign of the changing shaft linkage to the belt up / down clutch. The supplies menu no longer needs to be accessed to remove the transfer belt unit.

**Note:** If the operator panel is inoperable, or if you have an unrecoverable error code, this procedure can still be used.

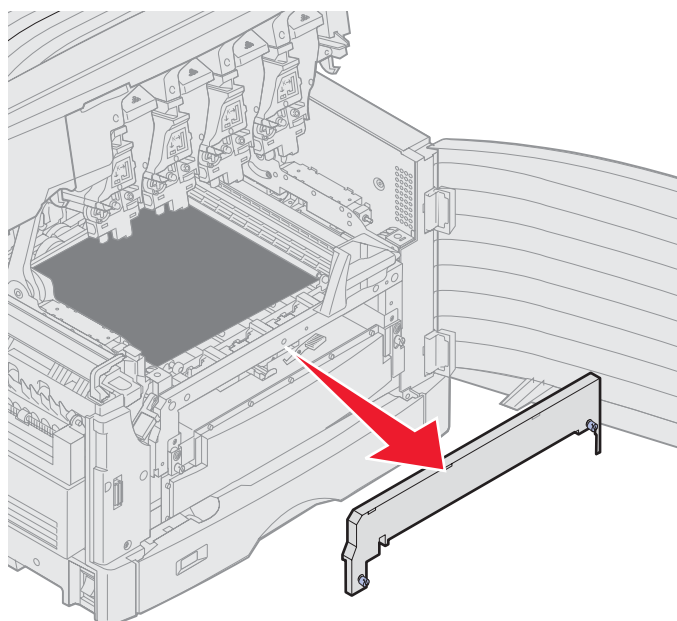
1. Turn the printer off, along with any optional devices connected to the printer.
2. Open the front cover and top unit.

**Warning:** Do not touch, drop, or place anything on the transfer belt. Touching the surface of the transfer belt or placing items on the belt may cause damage.

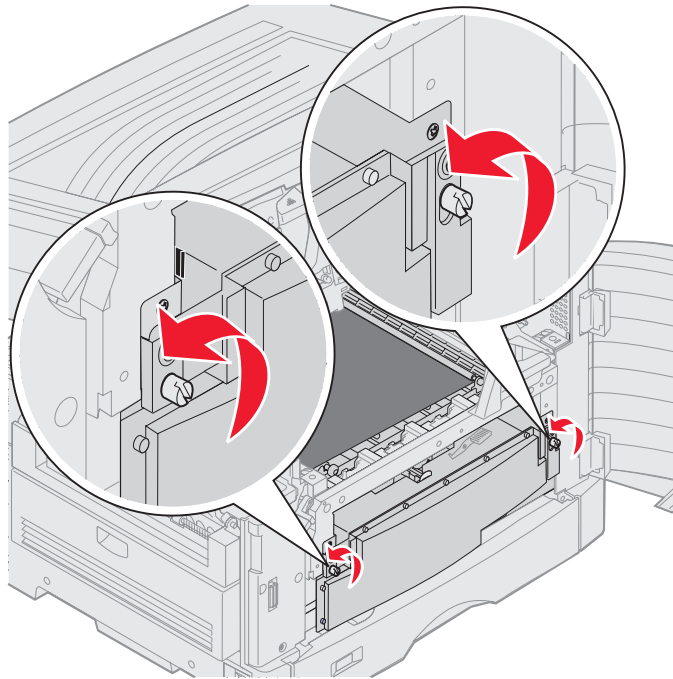
3. Loosen the thumbscrews as shown.



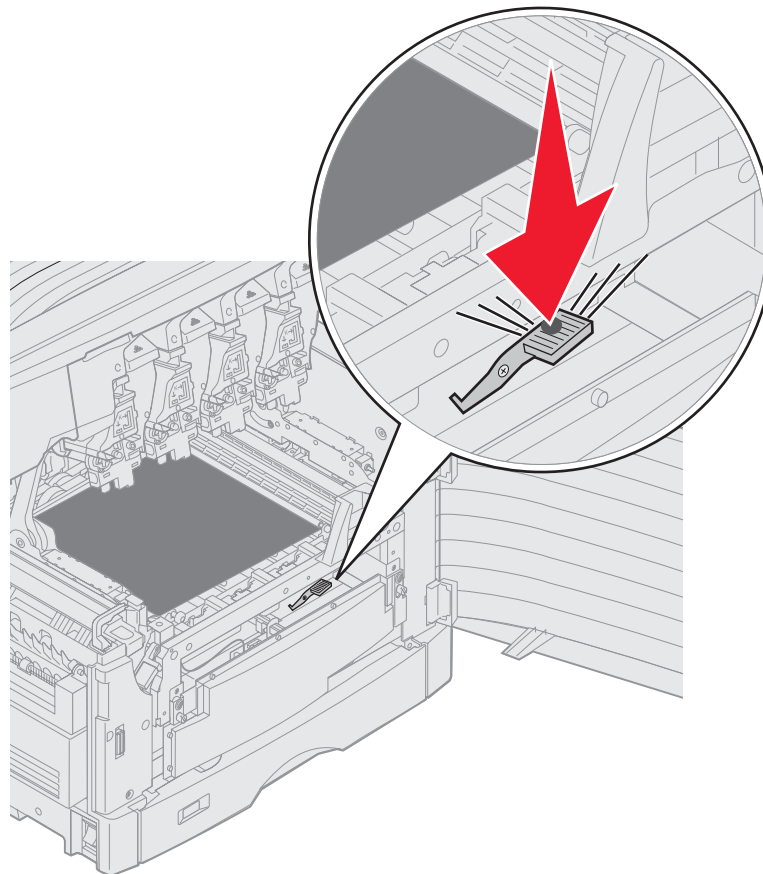
4. Lift and remove the transfer belt cover.



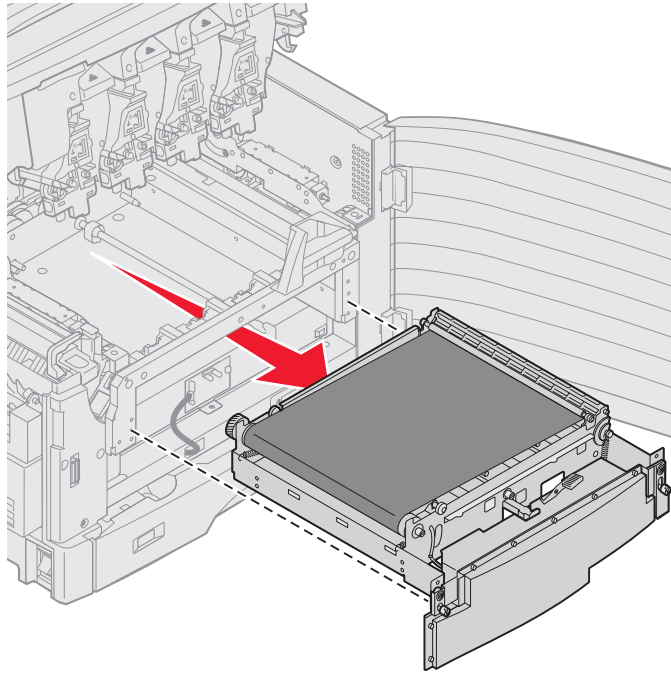
5. Loosen the thumbscrews as shown.



6. Press down on the transfer belt release lever as shown.



7. Pull the transfer belt out.

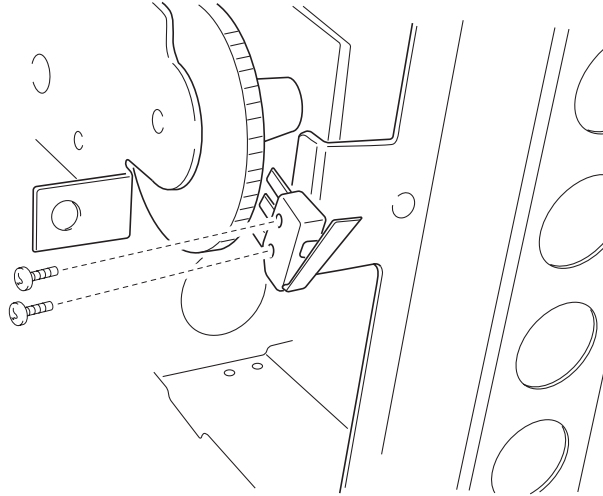


8. After replacing the transfer belt and removing the four shipping spacers, tighten the transfer belt thumbscrews, and reinstall the transfer belt cover.
9. Close the top unit, rotate the locking lever to the right, and close the front cover.
10. Turn the printer on.
11. Adjust the registration, if needed, by pressing the Menu key, scrolling to Settings, scrolling to Utilities, and selecting Alignment Info. From here, you can adjust the settings for the belt. Print an alignment page to confirm that the belt is properly adjusted. Perform further adjustments if needed.

**Note:** The belt adjustment can be adversely affected by a toner low condition.

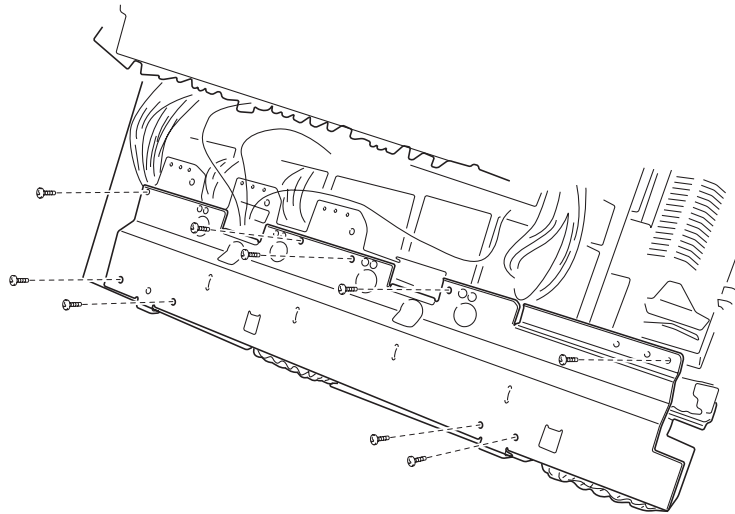
### ***Turn guide cover sensor removal***

1. Remove the left rear, rear, and right covers.
2. Remove the print controller card and the HVPS.
3. Disconnect the sensor cable from CN10 on the CK1 daughter card board.
4. Remove two screws from the turn guide sensor assembly, and remove the sensor.



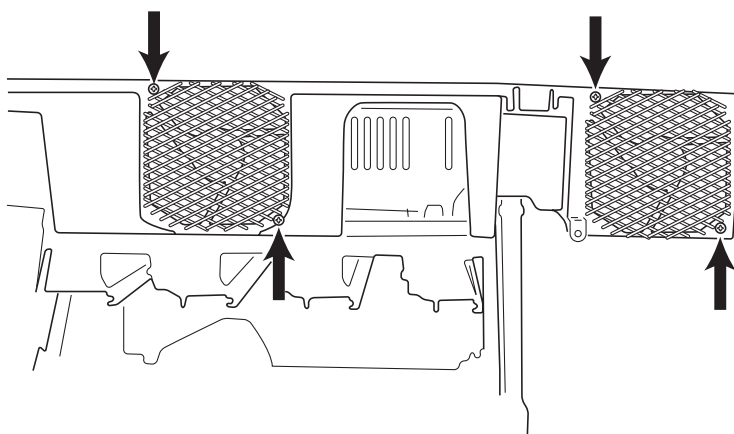
### ***Upper fan removal***

1. Open the top unit, and remove the toner cartridges and photodeveloper drum units, top cover, and face-down guide assembly.
2. Remove the four screws and the five screws from the upper bracket, and remove the bracket.





3. Remove the two screws from the left fan, and remove the fan.



4. Remove the two screws from the right fan, and remove the fan.

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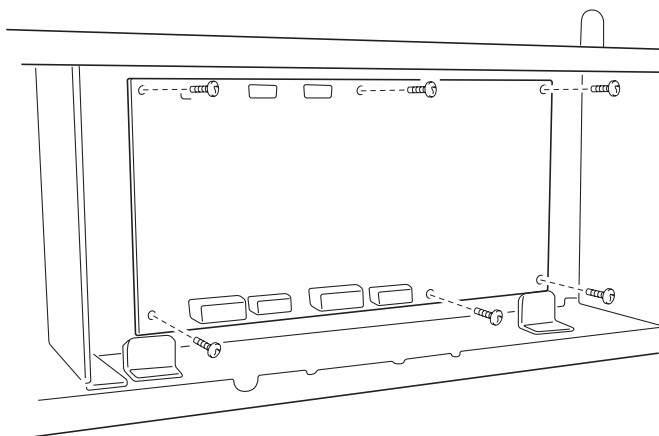
## Expansion feeder removals

### *Turn guide door removal*

1. Open the turn guide door.
2. Pull the door hinge from the right turn guide bushing.
3. Pull the turn guide door clear of the expansion feeder.

### *Expansion feeder controller board removal*

1. Remove six screws from the expansion feeder rear cover.
2. Unplug all cables from the expansion feeder controller board.
3. Remove six screws from the controller card.

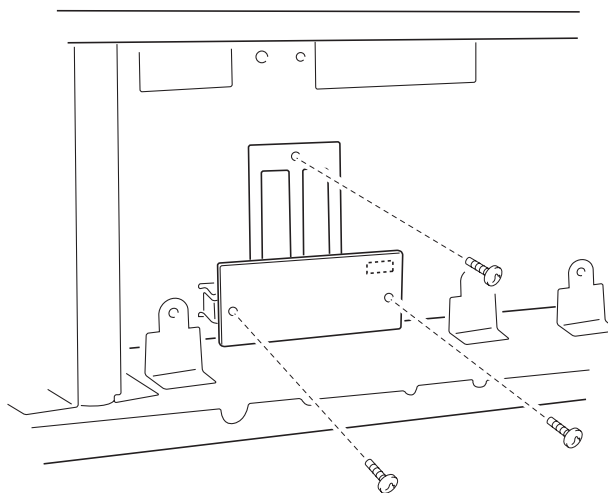


4. Remove the controller board.

**Note:** After replacing any board on the printer, ensure all the connections are properly connected before closing the covers.

### *Size sensor board removal*

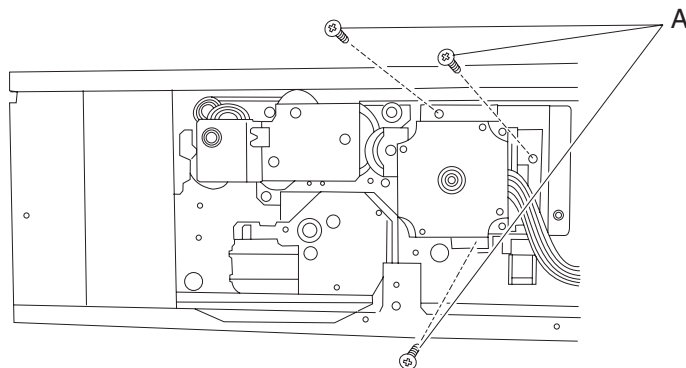
1. Remove the expansion feeder controller board.
2. Remove two screws on the size sensor board.



3. Remove the size sensor board.

## ***Stepper motor removal***

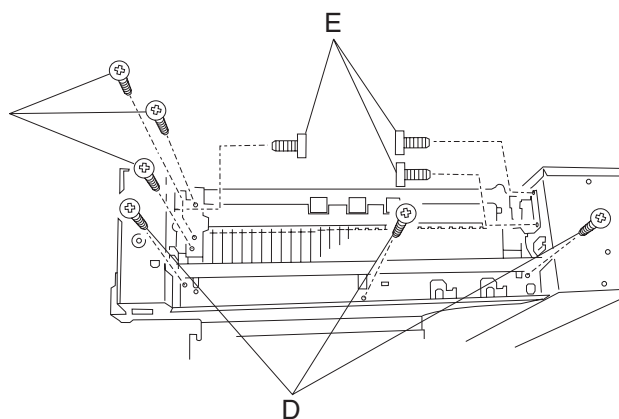
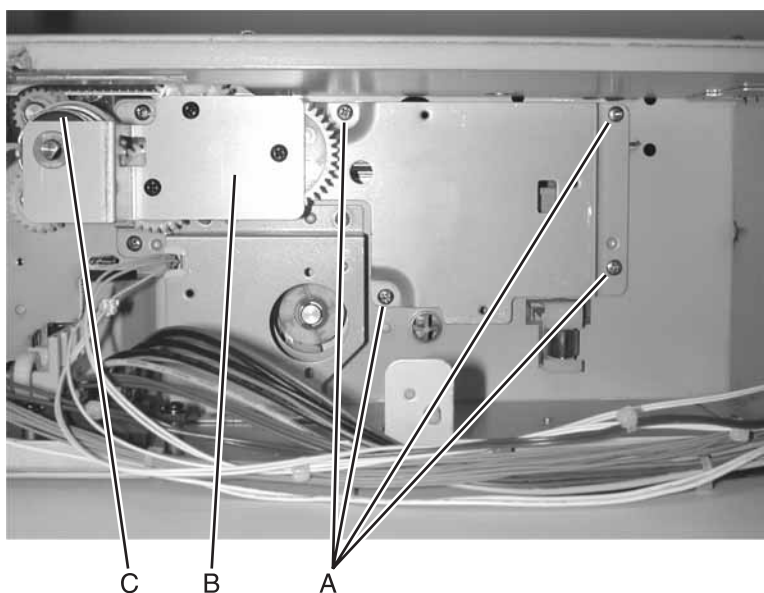
1. Remove the expansion feeder rear cover.
2. Disconnect the stepper motor power cable from the expansion feeder controller board.
3. Remove three screws from the stepper motor assembly (A).



4. Remove the stepper motor assembly from the expansion feeder.

## ***Paper feed assembly removal***

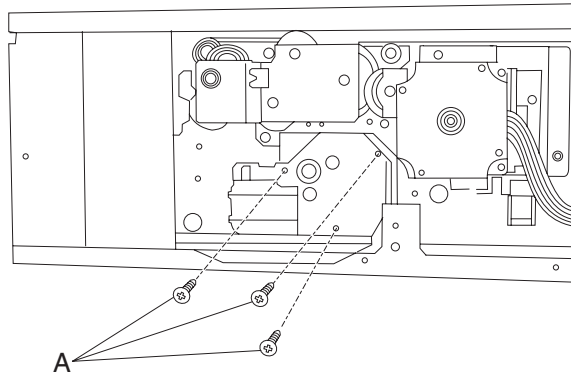
1. Remove the rear cover.
2. Remove the cassette.
3. Remove the stepper motor assembly.
4. Disconnect the cables from connectors CN11, CN13, CN18 on the expansion feeder controller board.
5. Remove the screws (A) holding the paper feed gear assembly.
6. Remove the gear assembly (B) and the paper feed clutch (C).
7. Remove three gears from the paper feed unit.



8. Remove the three cassette guide screws (D).
9. Remove three screws (E)
10. Remove three screws from the left side of the paper feed unit (F).
11. Feed the sensor cables through the side. Use care to avoid damaging the insulation.
12. Gently lift the paper feed unit out of the expansion feeder.

### ***Paper tray lift motor removal***

1. Remove the rear cover.
2. Remove the cassette.
3. Disconnect the cable from the paper tray lift motor.
4. Remove three black screws from the paper tray lift motor (A).



5. Remove the paper tray lift motor.

### ***Expansion feeder turn guide door sensor assembly removal***

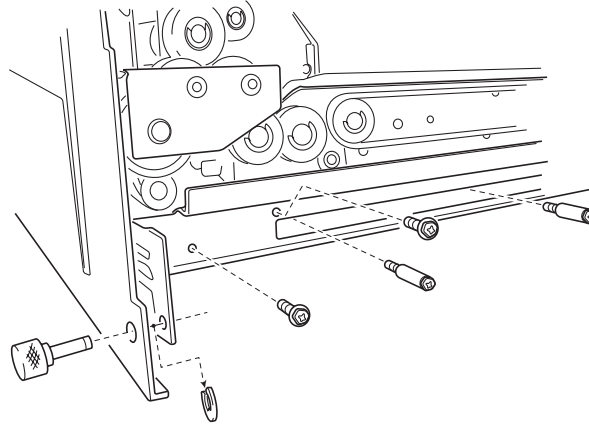
1. Remove the rear cover.
2. Disconnect the cable from CN15 on the controller board.
3. Open the turn guide door.
4. Remove two black screws from the door sensor.
5. Thread cable, avoid fraying insulation, through side frame, and remove the sensor.

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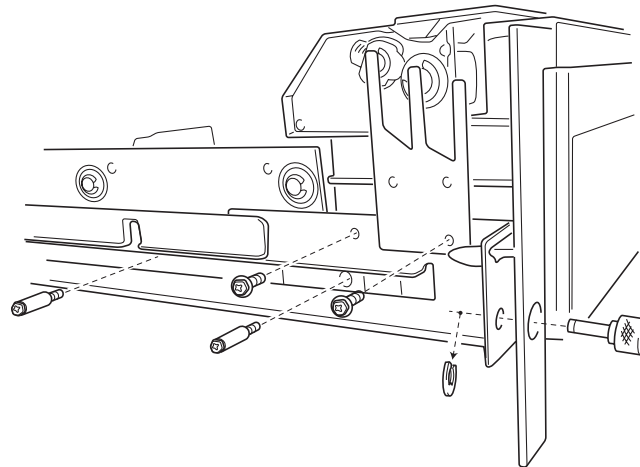
## Duplex removals

### *Duplex unit separation removal*

1. Remove the thumbscrews, C-clips, and screws as shown from both sides.

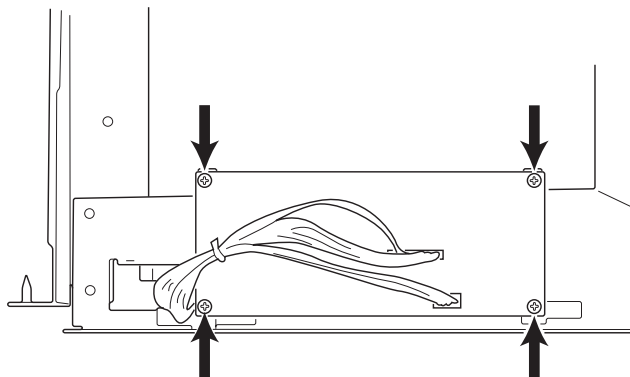


2. Remove the connectors, and separate the duplex frame from the duplex unit.

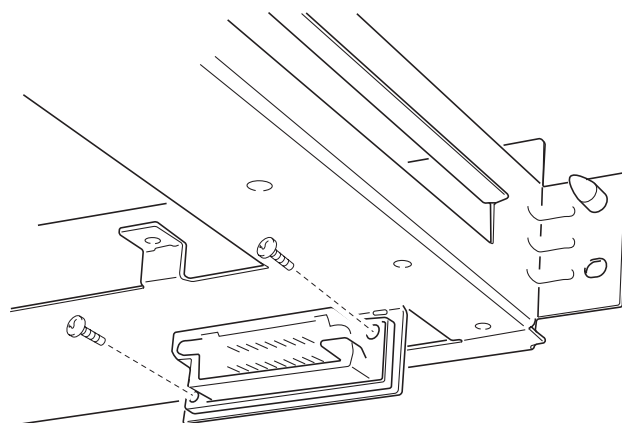


### ***Duplex unit removal***

1. Remove the four screws from the interface board, and remove the board.



2. Remove the two screws from the duplex connector, and remove the connector.

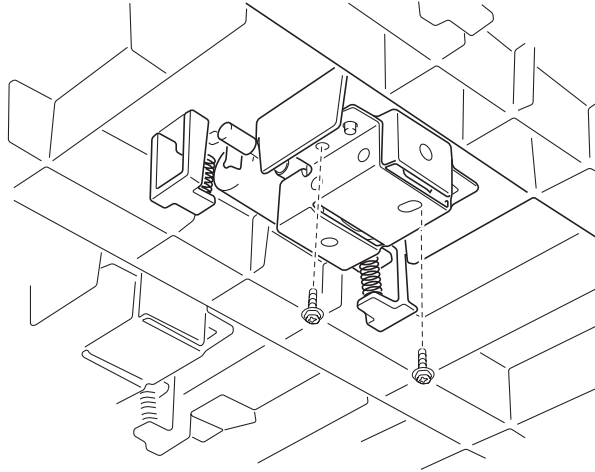


### ***Duplex timing belt removal***

1. Remove the three C-clips from the three timing gears, and remove the timing belts.
2. Remove the knob screw, and remove the timing belt.

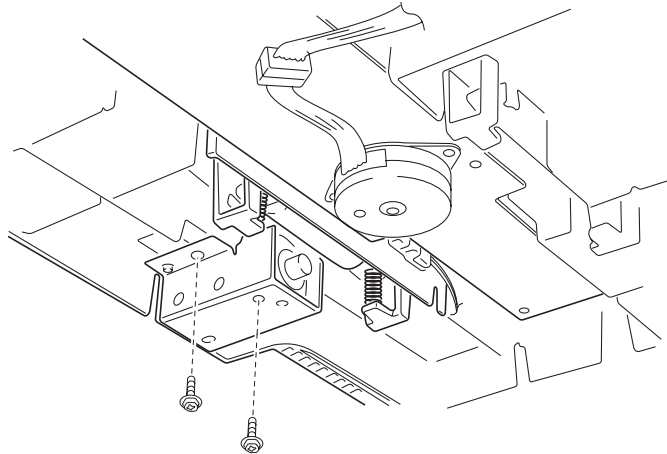
### ***Duplex pressure roller and solenoid removal***

Remove the two screws securing the pressure roller solenoid assembly.



### ***Duplex feed roller and solenoid removal***

1. Remove the two screws securing the feed roll solenoid assembly.

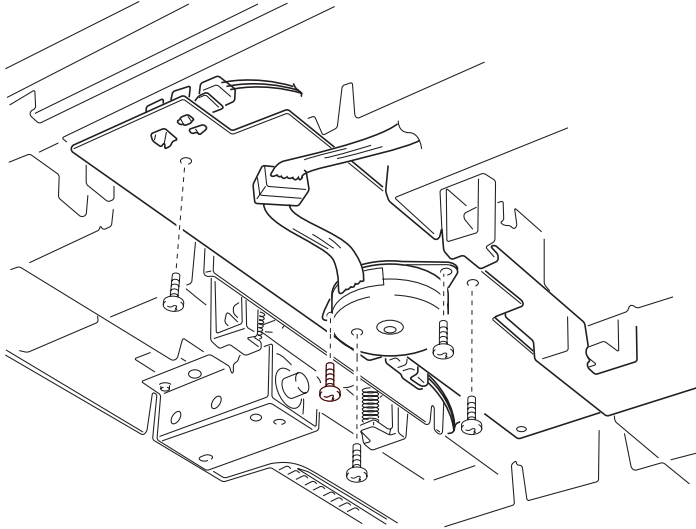


2. Remove the pressure roller and springs.
3. Remove the feed roller and springs.



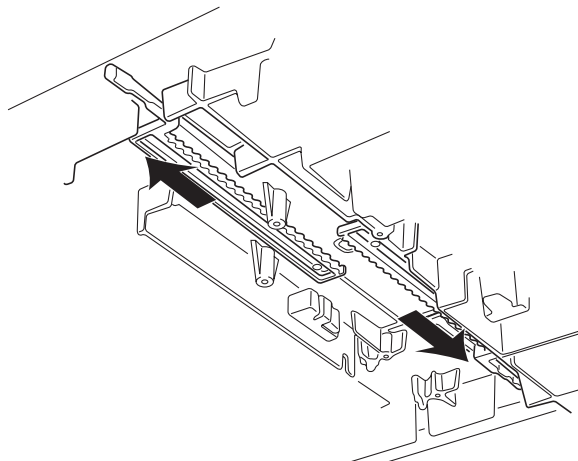
### ***Duplex side fence motor assembly/side fence removal***

1. Remove the three screws, and remove the side fence motor assembly.



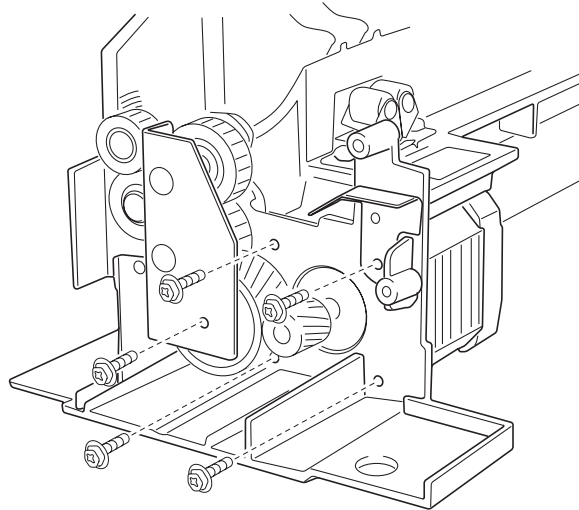
2. Remove the front and rear side fences.

**Note:** When installing, spread the front and rear side fences to the sides, and install.



### ***Duplex paper carrying motor removal***

1. Remove the gear cover.
2. Remove the screws from the duplex paper carrying motor, and remove the motor.

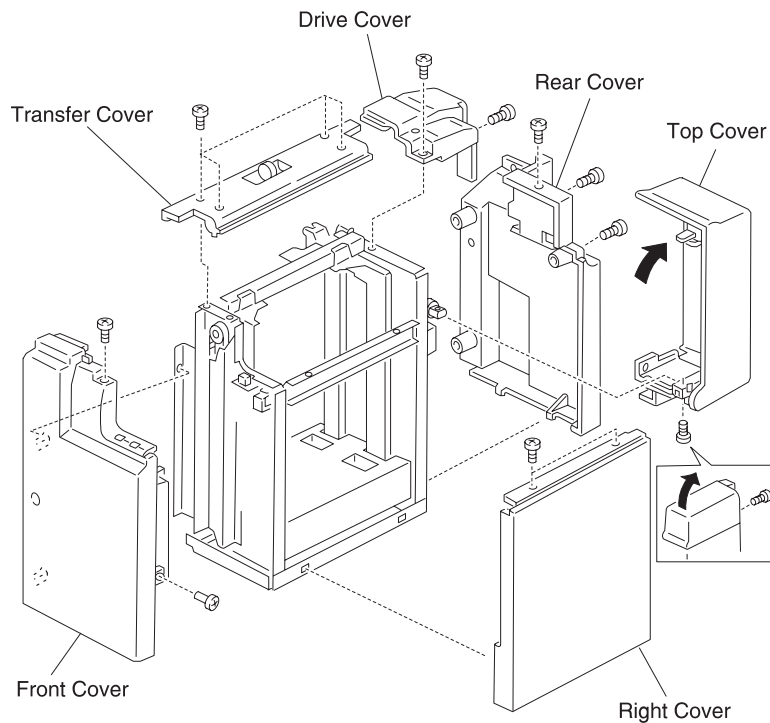


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## High-capacity feeder (HCF) removals

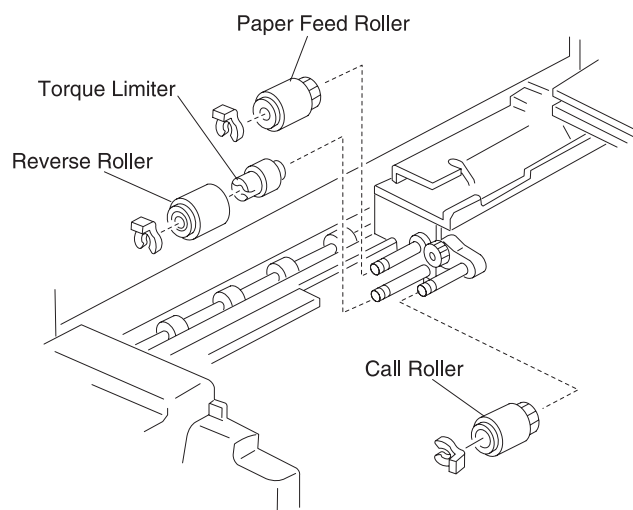
### *HCF covers removal*

1. Remove the two screws from the drive cover, and remove the cover.
2. Remove the front cover.
3. Remove the two screws from the right cover, and remove the cover.
4. Remove the top cover.
5. Remove the rear cover.
6. Remove the four screws from the transfer cover, and remove the cover.



### ***HCF call roller, paper feed roller, reverse roller removal***

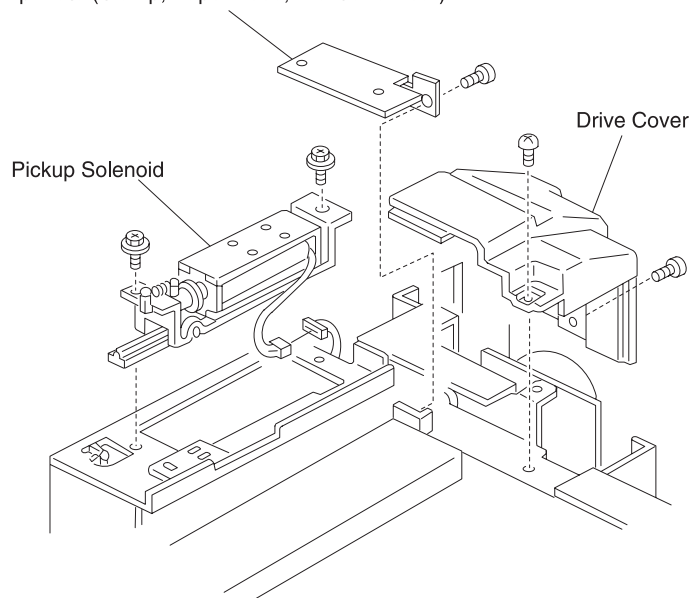
1. Open the top cover on the tray.
2. Remove the two screws from the transfer cover, and remove the cover.
3. Remove the retaining rings on the rollers, and remove the rollers.



### ***HCF pickup solenoid removal***

1. Remove the four screws from the transfer cover, and remove the cover.
2. Remove the two screws from the drive cover, and remove the cover.
3. Remove the screw from the clamp plate, and remove the plate.
4. Remove the connector and the two screws from the pickup solenoid, and remove the solenoid.

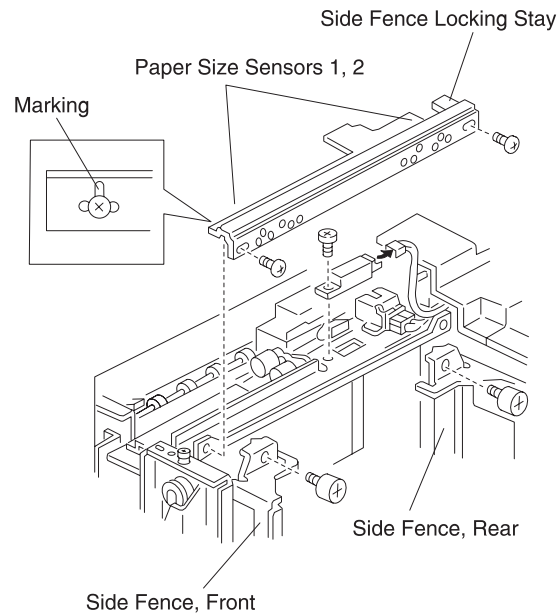
Clamp Plate (Clamp; Paper Feed; Front and Rear)



## HCF paper end sensor removal

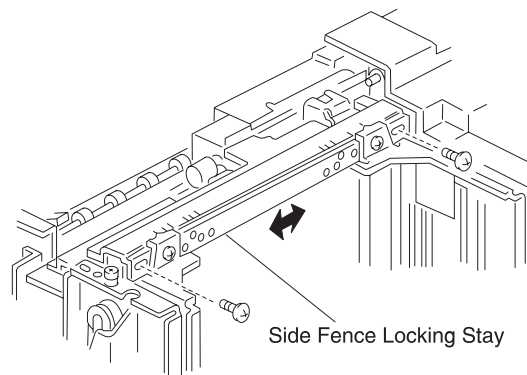
### HCF paper size sensors (1, 2) removal

1. Cover the paper level sensor with your hand, and press the down button. The tray moves down. Lower the tray until the down sensor turns on.
2. Remove the front cover and transfer cover.
3. Remove the two screws on the front and rear sides of the side fence.
4. Mark the locking position of the side fence locking stay.
5. Remove the two screws on the side fence locking stay.
6. Remove the screw and connector from paper end sensor, and remove the sensor.
7. Remove the screw and connector from the clamp plane, and remove the paper size sensors 1 and 2.

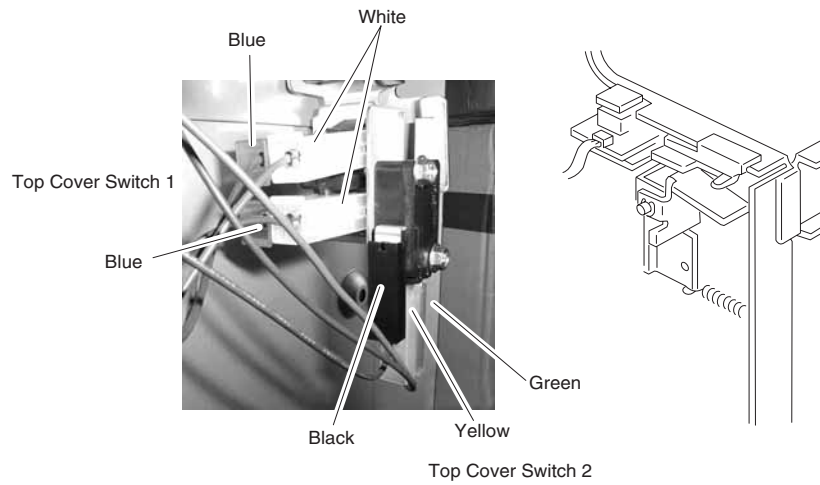


#### Notes:

- To prevent damage to the stay, hold the stay when removing the sensors.
- Be sure the side registration is not shifted, which may occur with the dismounting and mounting of the locking stay. If it is shifted, relocate the stay toward the front or rear to adjust.

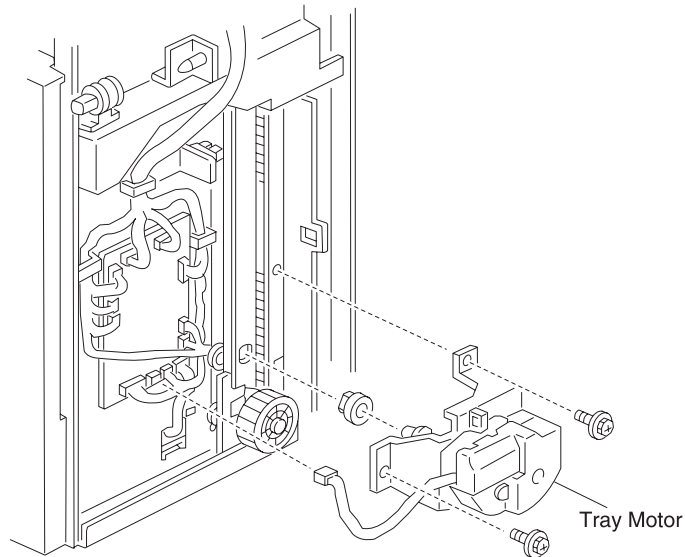


8. Remove the top cover switches.



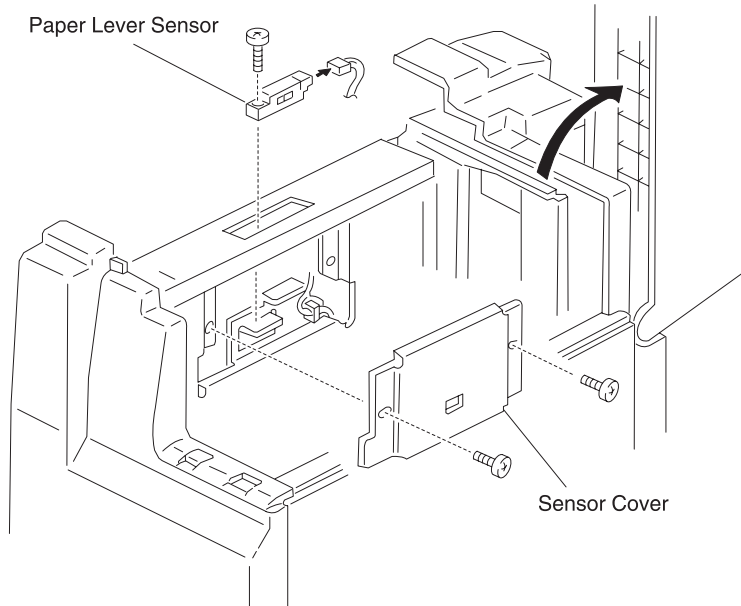
### ***HCF tray motor removal***

1. Remove the rear cover and the drive cover.
2. Remove the two screws of the tray motor, and remove the motor.



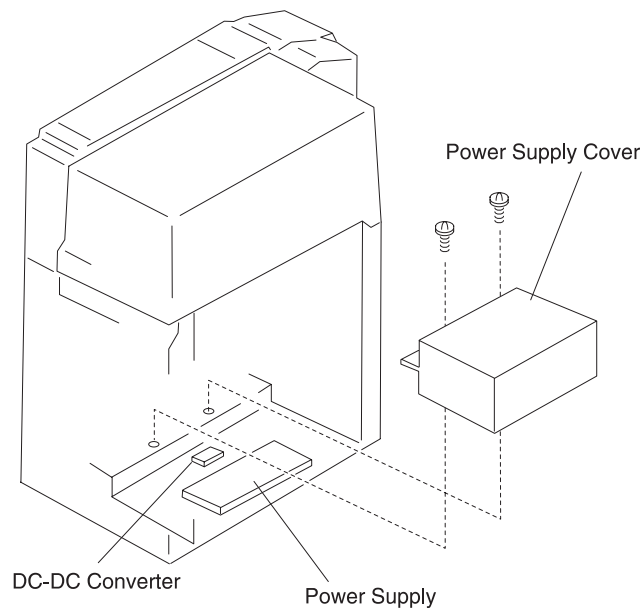
### ***HCF paper level sensor removal***

1. Remove the four screws from the transfer cover, and remove the cover.
2. Remove the two screws from the sensor, and remove the cover.
3. Remove the connector and screw from paper level sensor, and remove the sensor.



### ***HCF power supply removal***

1. Move the paper tray upward.
2. Disconnect the power cord.
3. Remove the front cover.
4. Remove the two screws from the power supply cover, and remove the cover.
5. Remove the four screws from the power supply unit, and remove the unit.
6. Remove the two screws from the DC-DC converter, and remove the converter.



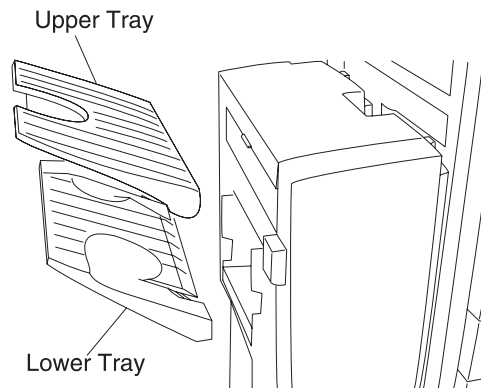
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## Finisher removals

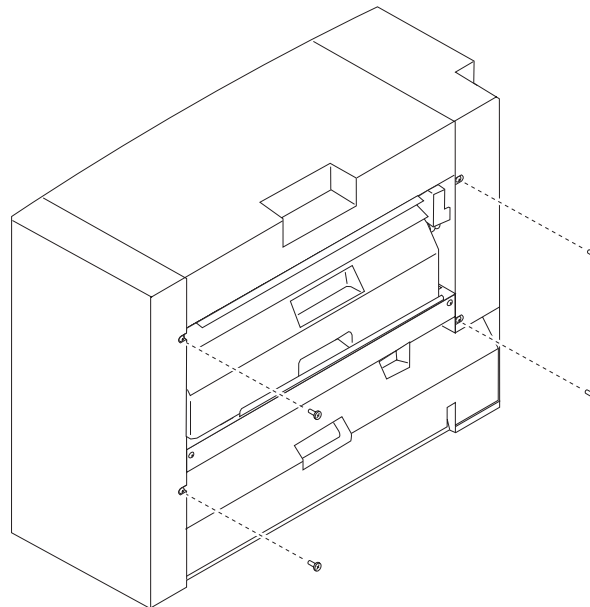
**Note:** Check finisher alignment when moving or servicing the finisher. After moving or servicing the finisher, print some test pages to the finisher to ensure the vertical and horizontal alignment is correct. If the finisher is not properly aligned, refer to **“Aligning the finisher and printer” on page 3-59** for alignment instructions.

### External covers removals

1. Remove the finisher trays.



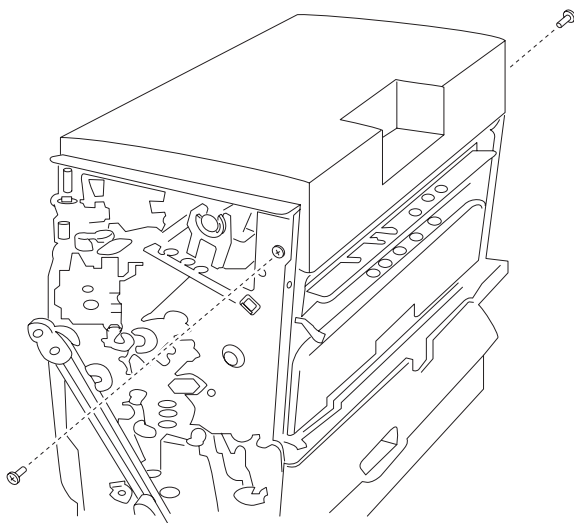
2. Remove the two screws from the front cover, and remove the cover.



3. Remove the two screws from the rear cover, and remove the cover.

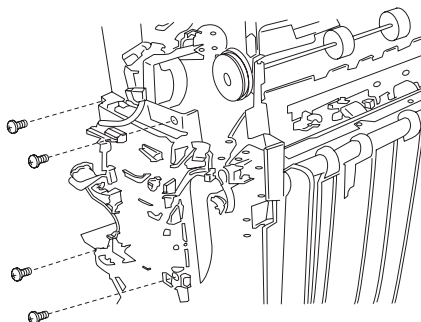


4. Remove the two screws from the top cover, and remove the cover.



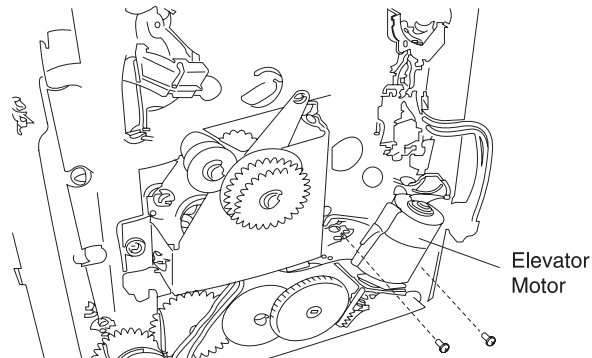
### ***Finisher control board removal***

1. Remove the external covers.
2. Disconnect all of the associated connectors.
3. Remove the four finisher control board mounting screws, and remove the board.



### ***Elevator motor removal***

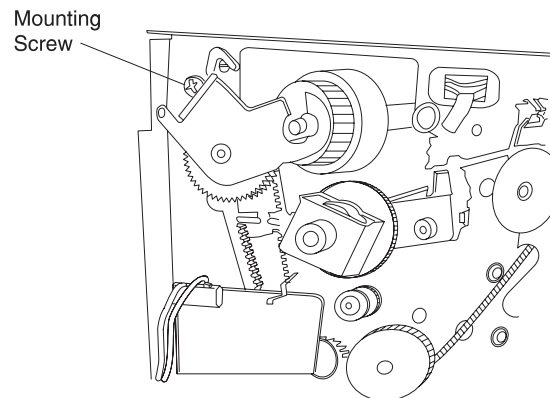
1. Disconnect the elevator motor connector.
2. Remove the two elevator motor bracket screws from the bracket.



3. Remove the elevator motor assembly.

### ***Feed motor assembly removal***

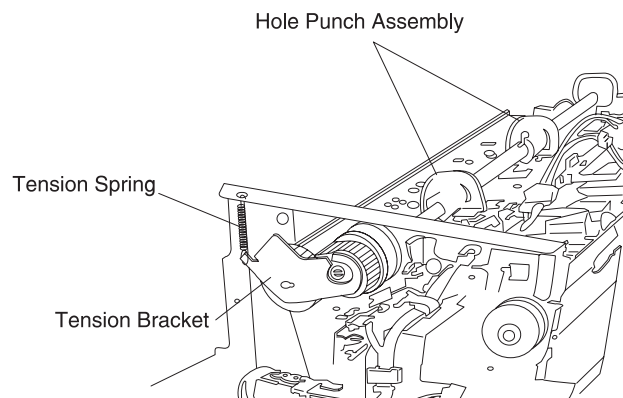
1. Remove the finisher control board mounting bracket.
2. Loosen the tension bracket mounting screw.



3. Disconnect the feed motor connector.
4. Remove the three screws and connector from the feed motor mounting bracket, and remove the feed motor assembly.
5. Remove the feed motor pulley.

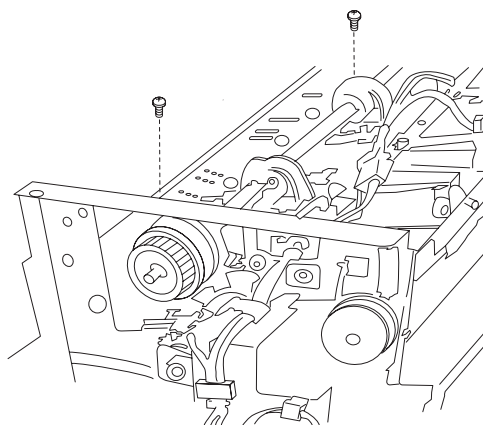
## Hole punch removal

1. Remove the external covers.
2. Remove the hole punch unit cables.
3. Remove the tension spring.
4. Remove the screw and E-ring from the tension bracket, and remove the bracket.



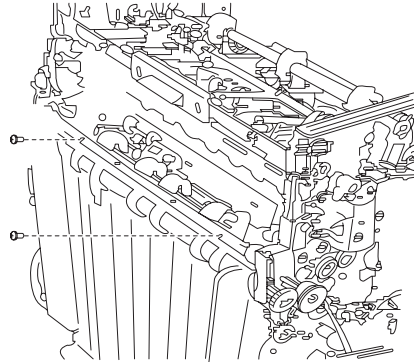
**Note:** When installing the tension bracket, use the left side screw hole for the three hole punch unit and the right side screw hole for the four hole punch unit.

5. Remove the two hole punch unit screws, and remove the unit.



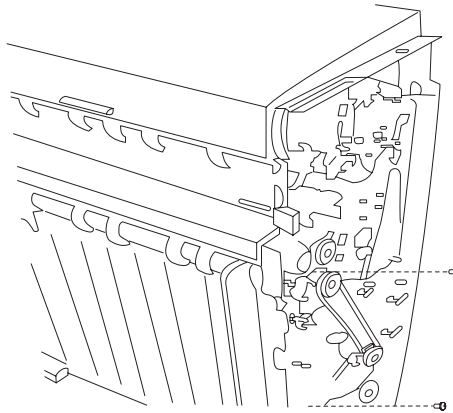
### ***Inverter paper exit discharge brush removal***

1. Remove the external covers.
2. Remove the finisher control board.
3. Remove the upper left panel.
4. Remove the two discharge brush screws, and remove the brush.

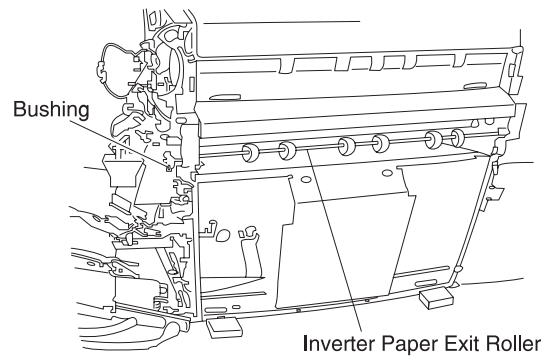


### ***Inverter paper exit roller removal***

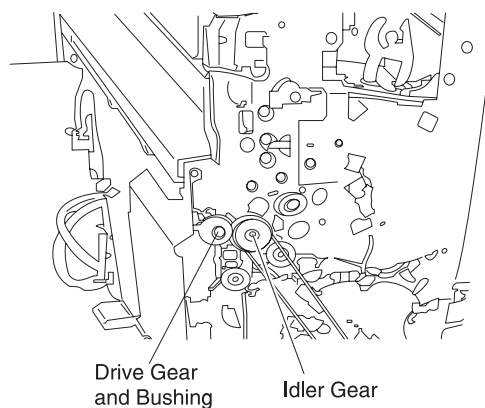
1. Remove the front and rear external covers.
2. Remove the four lower left panel screws, and remove the panel.



3. Disconnect the harness connect from the lower left panel.
4. Remove the inverter paper exit roller bushing.



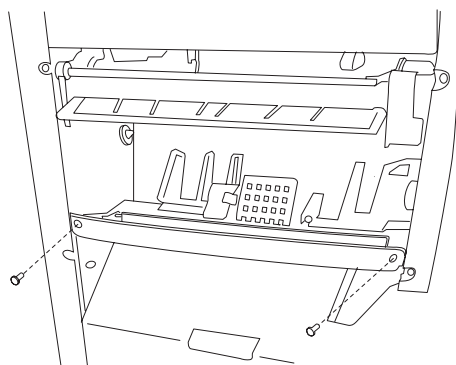
5. Remove the inverter idle gear.
6. Remove the inverter drive gear and bushing.



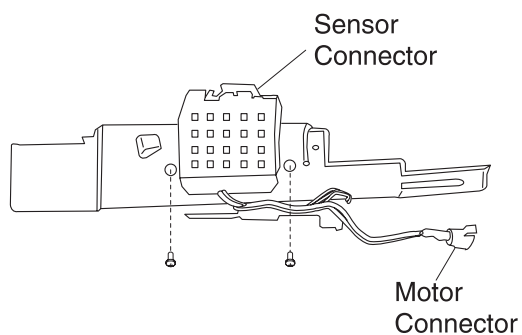
7. Remove the inverter paper exit roller.

### ***Jogging unit removal***

1. Remove the dust box.
2. Remove the two screws, and remove the cover.



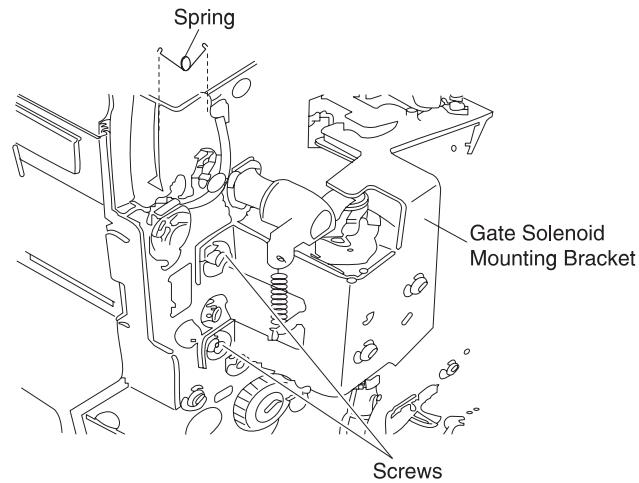
3. Disconnect the jogging motor connector.
4. Disconnect the jogging home position sensor connector.



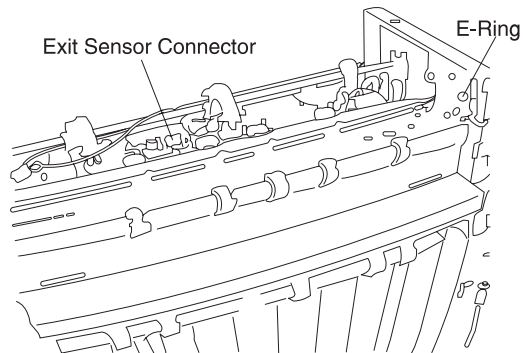
5. Remove the jogging unit.

### ***Path select gate removal***

1. Remove the external covers.
2. Remove the two screws from the top cover, and remove the cover.
3. Remove the gate solenoid with mounting bracket.
4. Remove the straight paper exit sensor connector.
5. Remove the upper guide plate for the straight paper exit.
6. Remove the two screws and two springs for the upper guide plate.



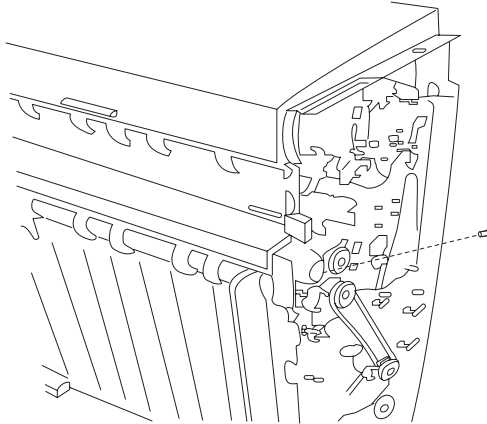
7. Remove the path select gate.



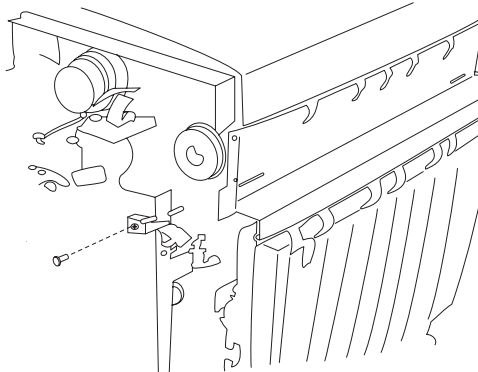
**Note:** Adjust the solenoid bracket mounting position so that the gate arm is contacting the solenoid.

## ***Patting roller removal***

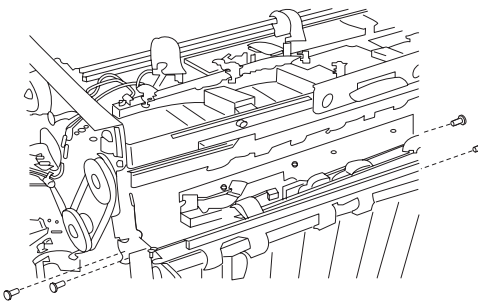
1. Remove the front and rear covers.
2. Remove the finisher control board mounting bracket.



3. Remove the two screws from the upper left panel, and remove the panel.

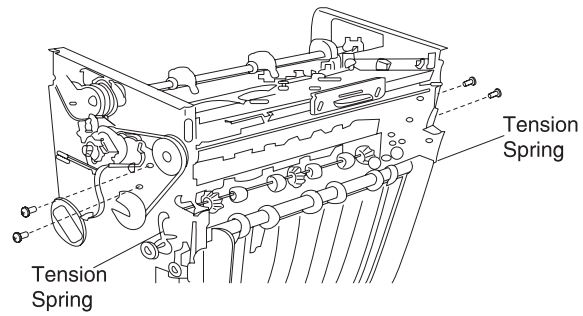


4. Disconnect the sensor connector.
5. Remove the sensor harness from the harness clamp.
6. Remove the four upper guide plate screws from the inverter paper exit, and remove the plate.

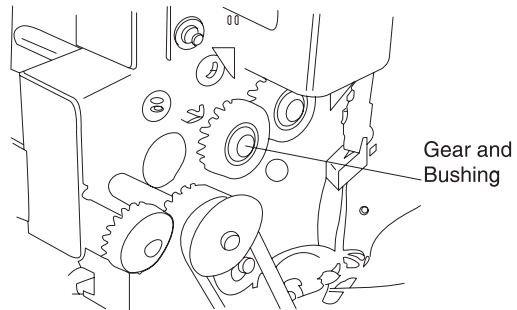


7. Remove the four screws from the inverter guide plate, and remove the plate.

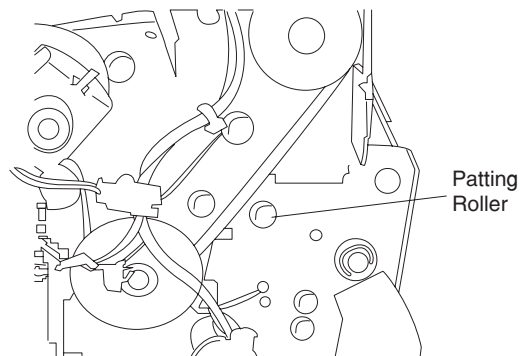
- 8.** Remove the tension springs. Use the upper hole when installing the spring.



- 9.** Remove the gear and bushing.



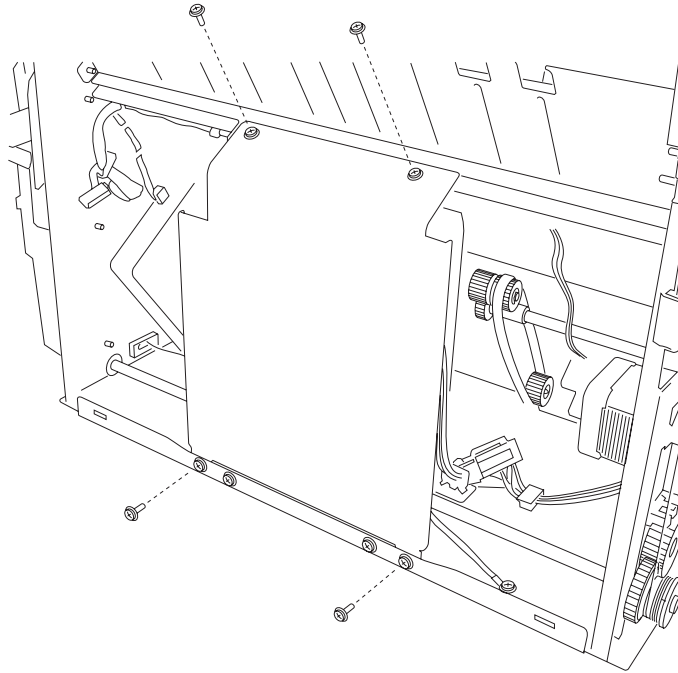
- 10.** Remove the patting roller.



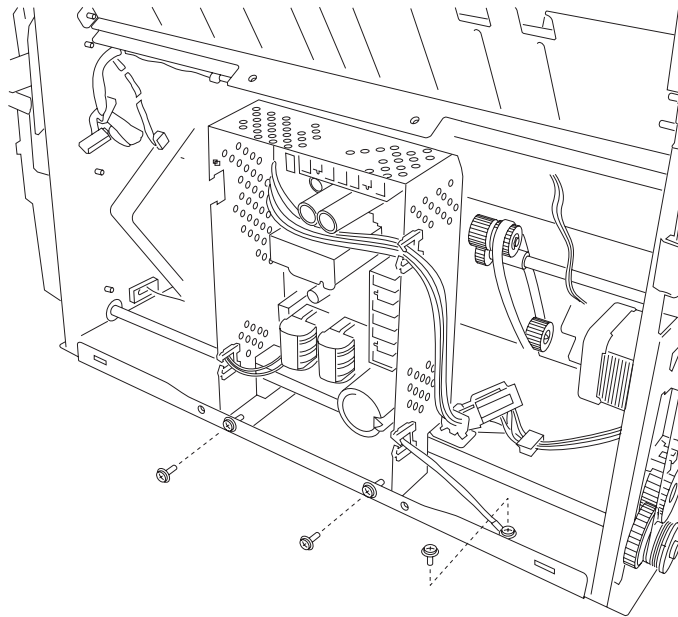


## Power supply removal

1. Unplug the power cord from the printer.
2. Remove the external covers.
3. Remove the lower left panel.
4. Remove the cable connector for the left panel.
5. Remove the four lower guide support plate screws, and remove the plate.



6. Remove the two power supply screws.



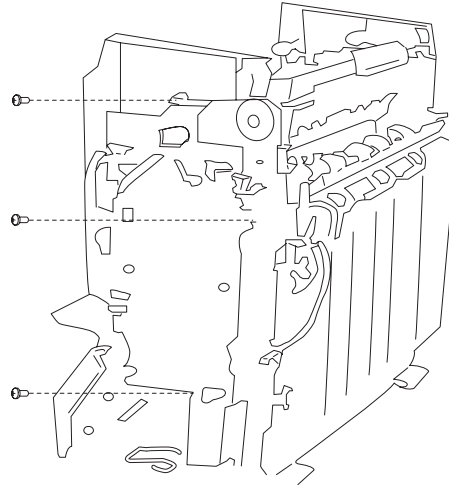
7. Remove the screw from the ground wire.
8. Disconnect the power supply connector, and remove the power supply.

### ***Registration roller removal***

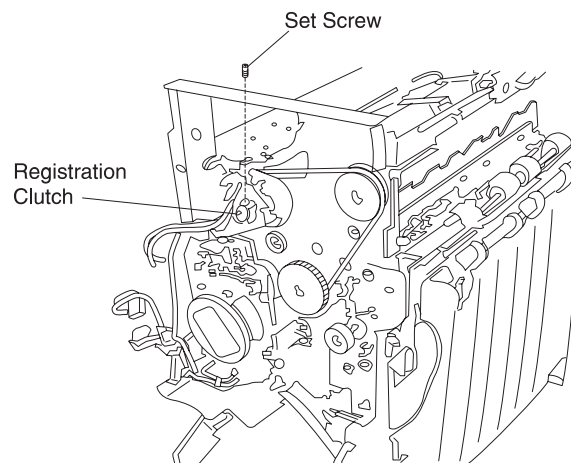
1. Remove the hole punch unit.
2. Remove the registration roller clutch.
3. Remove the registration roller bushing.
4. Remove the registration roller.

### ***Registration roller clutch removal***

1. Remove the harness from the clamp.
2. Remove the three control board mounting bracket screws, and remove the bracket.



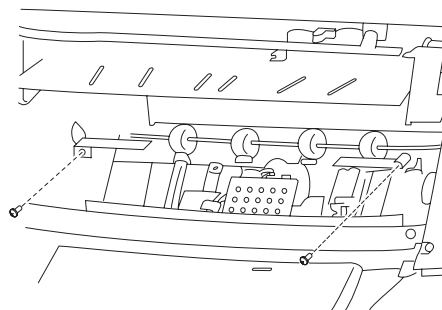
3. Remove the registration roller clutch set screw.



4. Remove the registration roller clutch connector.
5. Remove the registration roller clutch.

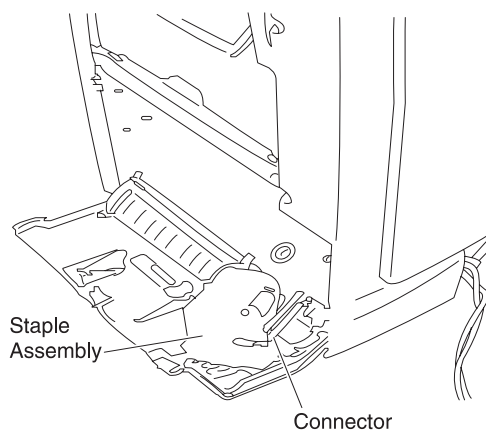
### ***Stack area discharge brush removal***

1. Remove the dust box.
2. Remove the stack area discharge brushes.



### ***Staple unit removal***

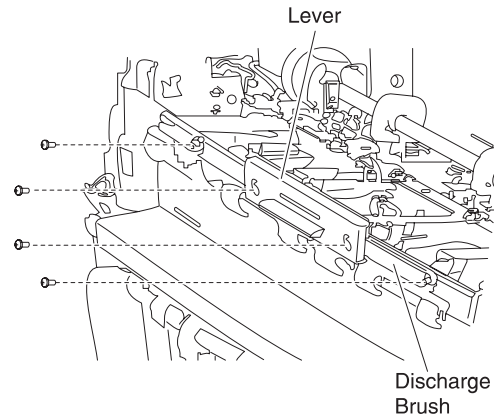
1. Remove the staple unit connector.



2. Pull outward on the staple cover, and remove the staple unit.

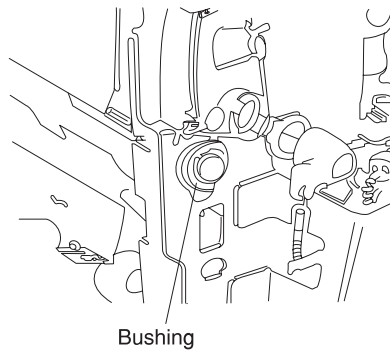
### ***Straight paper exit discharge brush removal***

1. Remove the external covers.
2. Remove the two screws from the top cover, and remove the cover.
3. Remove the two lever screws, and remove the lever.
4. Remove the two discharge brush screws, and remove the brush.



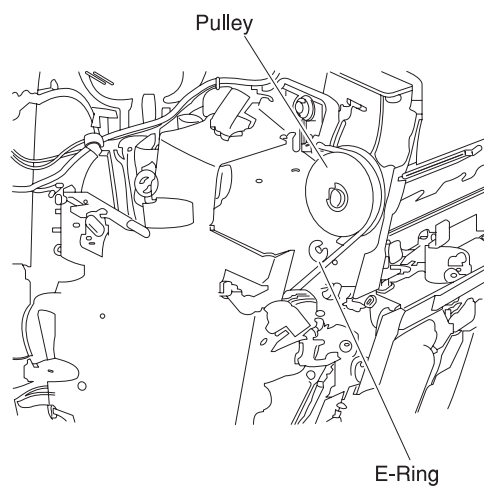
### ***Straight paper exit roller removal***

1. Remove the external covers.
2. Remove the finisher control board.
3. Remove the upper left panel.
4. Remove the front straight paper exit roller bushing.

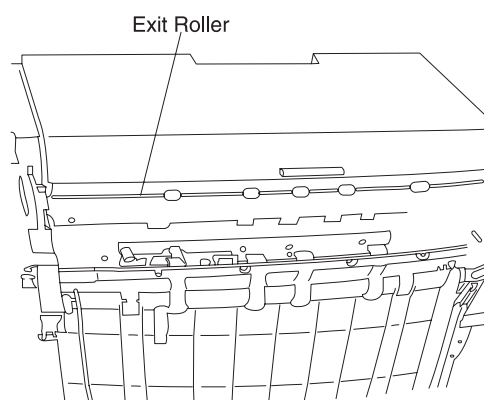


5. Remove the belt and pulley.

6. Remove the rear straight paper exit roller E-ring and bushing.

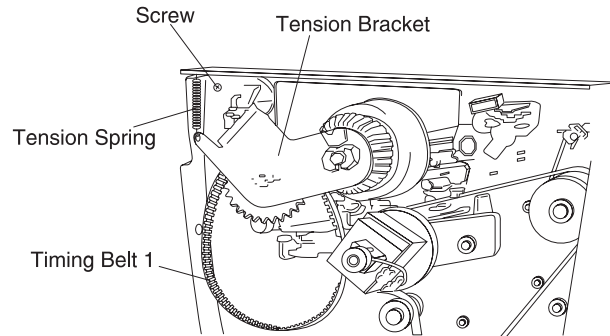


7. Remove the straight paper exit roller.

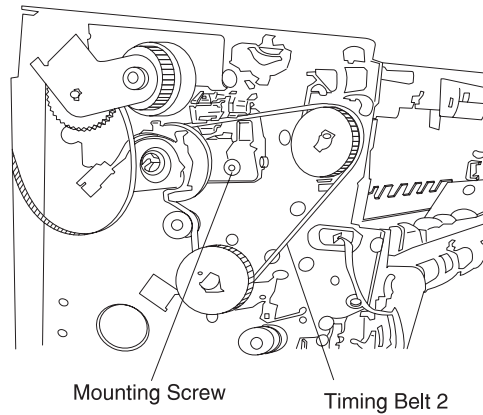


### ***Timing belts 1 and 2 removal***

1. Remove the finisher control board mounting bracket.
2. Remove the feed motor mounting bracket.
3. Remove the tension bracket mounting screw.



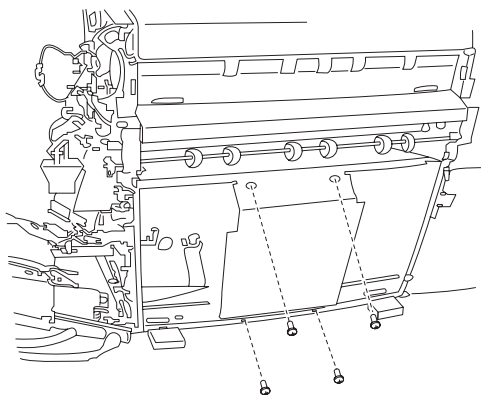
4. Remove the tension spring.
5. Remove the timing belt 1.
6. Loosen the tension bracket mounting screw for timing belt 2.



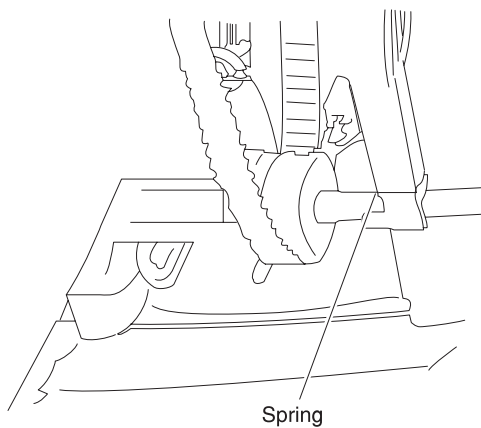
7. Remove the timing belt 2.

## ***Tractor belt removal***

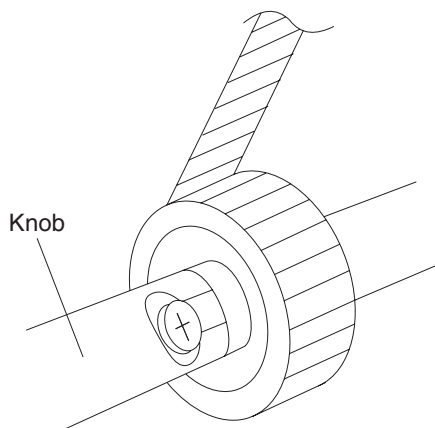
1. Remove the external covers.
2. Remove the lower left panel.
3. Remove the cable connector of the left panel.
4. Remove the belt motor unit.
5. Remove the four lower guide support plate screws for the invert paper exit.



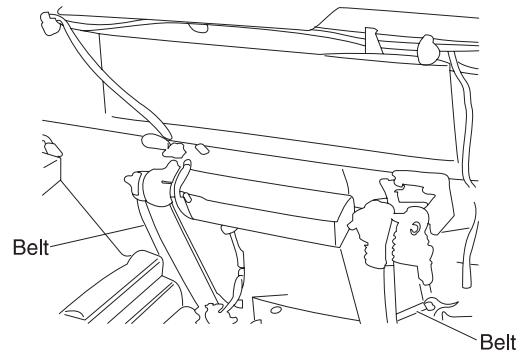
6. Remove the tension spring from the shaft.



7. Remove the paper jam removal knob.



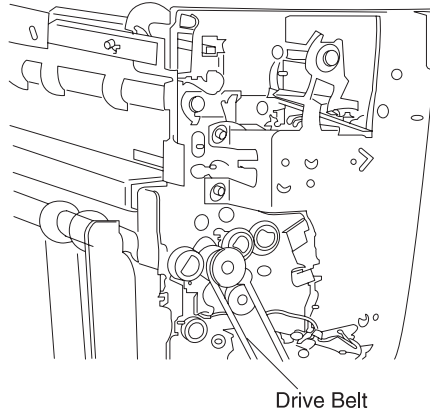
8. Remove the tractor belts.



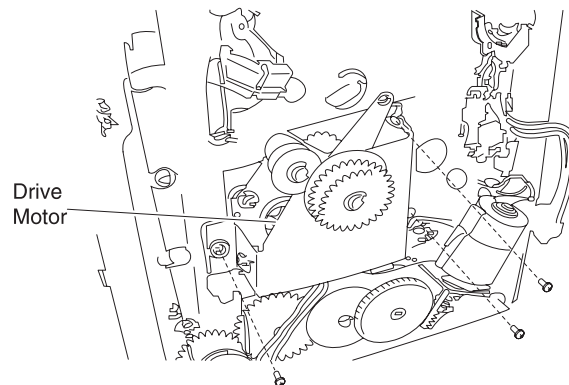
**Note:** Install the belt so that the belt tooth just under the plastic hook aligns with the hook on the other belt.

### ***Tractor drive motor assembly removal***

1. Remove the outer covers.
2. Remove the drive belt.



3. Remove the three screws, and disconnect the connector from the tractor drive motor assembly.



4. Remove the tractor drive motor assembly.